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"HARVEY" FRUIT GRADERS

Covent Garden, London Praises Efficiency of Harvey Graders

"This fruit opened up in very fresh and firm condition, and was most attractively packed. It was very pleasing to note the regularity of the shape of this extra fancy line of fruit—a particular feature which is usually lacking in many Tasmanian packs.

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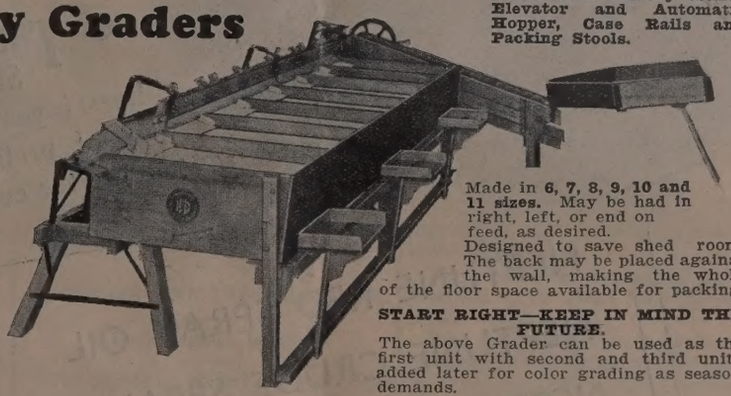
Your packing is the best we have seen on the market this season. It is similar to the American in such a way that it shows a very firm pack and an even bulge which has not been obtained by using different sized apples." (Extract from letter received by A. B. Curran, Esq., East Tamar, Tasmania, **who uses a "Harvey" Grader.)**

PEAR GRADERS—These Machines can be made to any capacity to suit the small grower or the large Packing Shed. Twin Machines to handle **two or more qualities simultaneously can be supplied. The pears are carried along stalk downwards and are not rolled. They can be thrown on to the sorting table, which is constructed in a special manner with** a canvas belt to ensure no bruising. **The sizing device of the "HARVEY" Pear Grader is provided with rubber belts running in the same direction, and arranged to carry along the pears motionless to their respective bins. The grading sections are adjustable to give any grade desired, and are independently operated. The machine is fitted with spring floor bins, which obviate bruising. Can be operated equally well by hand or power, and is a fast and efficient Machine. Supplied in standard sizes or to any size or specification desired. In the London Market, where consignments have been particularly watched for mechanical grader marks, pears graded by the "HARVEY" Grader have opened up in perfect condition, being beautifully graded, and the pack showed up to the best advantage, and it is said that no better fruit has been received from any part of the world.**

"HARVEY" Model 7CC Grader Right-Hand Feed Front with Harvey Roller Elevator and Automatic Hopper, Case Rails and Packing Stools.



Made in **6, 7, 8, 9, 10 and 11 sizes.** May be had in right, left, or end on feed, as desired. Designed to save shed room. The back may be placed against the wall, making the whole of the floor space available for packing.

START RIGHT—KEEP IN MIND THE FUTURE.
The above Grader can be used as the first unit with second and third units added later for color grading as season demands.

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The new Harvey 1937 Grader has astounding efficiency. It is fitted with variable speed gear. The grading rollers are independently adjustable—each roller is independently driven—the whole or any roller may be driven or left free on its sensitive ball bearings. It is unequalled for accurate sizing—no bruising.

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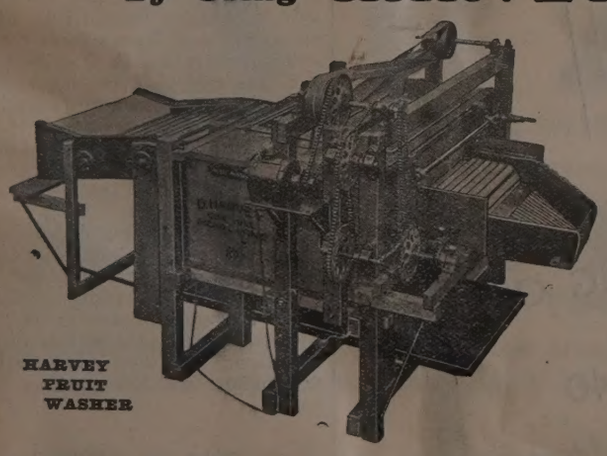

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SCIENTIFICALLY DESIGNED

The Cheapest and Surest Method of Washing Fruit. Enhances Appearance. NO BURNING—NO BRUISING can take place within the Machine itself, which THOROUGHLY WASHES the Fruit, removing all TRACES OF ARSENATE LEAD POISON and Hydrochloric Acid. As the season is fast approaching, please Order Early to Ensure Delivery.

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EDITORIAL

The Month in Review.

THE 1937 fruit season opened favorably and producers have now settled down to their busy seasonal activities.

The soft fruit season came with its usual rush, but there was an absence of the gluts which in the past have proved so troublesome.

There was a shortage of Apricots, Peaches have been sold at fair prices.

While much yet remains to be done in the way of organisation, generous praise should be accorded to those men of vision and forcefulness who have assisted in bringing about the present measure of stabilisation.

Australian growers of canning fruits have now organised an efficient association, the Secretary of which is Mr. W. Young, of Ardmona, Vic. The major associations affiliated are those in the Goulburn Valley area (Victoria), and the Murrumbidgee area N.S.W.

The grant of £215,000 per annum made available from the Sugar Industry has been of material assistance in stabilising the canned fruits situation. This fund is administered by the Fruit Industry Sugar Concession Committee on which the various interests are adequately represented.

The question of the renewal of the Ottawa Agreement is exercising the minds of producers.

It was generally believed that the Ottawa Agreements were to be reviewed this year, several industries having expressed the need for greater preference.

Surprise has been expressed that no arrangements have apparently been made so far by the Australian Government for representations in this connection. If the British Government is to be approached it would appear to be not only eminently desirable, but absolutely imperative for a Minister or competent Departmental Officers as well as trade advisers to be in attendance.

In particular, growers of canning fruits have continuously advocated an alteration of the present protection of 15 per cent. ad valorem to a flat rate protection on weight.

Only by this latter method can the desired protection be made real.

Scientific Research.

The annual report of the Council for Scientific and Industrial Research has been issued and various excerpts are published in this issue.

The C.S.I.R. has won and maintained the goodwill of the whole community because of its efficiency. The Chief Executive Officer, Sir David Rivett, is held in highest esteem, and he has associated with him committees and a staff whose services are of the greatest importance to the Commonwealth.

Primary producers in all the States have greatly benefited through the researches of the C.S.I.R., and the attention which is now being given to the secondary industries is welcome in order that we can develop a balanced Commonwealth.

It is unquestioned that much yet remains to be done in this matter of scientific research and relative problems. Producers in Victoria for example, while congratulating their fellow producers in South Australia and N.S.W., on their experimental orchards, are earnestly impressing on their own Government the necessity for establishing similar research orchards in representative parts of the State.

Mr. P. H. Thomas, Chief Horticulturist of the Tasmanian Department of Agriculture, has just returned from a visit to the Pacific Coast, U.S.A. and Canada. He saw there, as have also other observers, wonderful experimental orchards, particularly in U.S.A.

We, in this young country of Australia, need more of this intensive research work, and pressure must be brought to educate public opinion in this direction.

SAFEGUARDING THE APPLE INDUSTRY.

Proposals for Developing the Australian Market.

Effective Lead by Apple and Pear Council.

Because of the known limitations of the Apple export trade, proposals have been lauched for developing the Australian market, the effective leadership in this connection having come from the Australian Apple and Pear Export Council.

While primarily formed to deal with export, the Council, which is composed of those who are vitally associated with local marketing as well as export, has come to realise that these two aspects cannot be considered separately.

It is quite apparent that it is impossible to fix quantities for export, also varieties for export, without there being a definite effect on the local market. Also there are two other major factors—one is the loss of the German market, which was estimated at 1¼ to 1½ million bushels of Apples annually, and the other the increasing production in Australia. The potential increase being estimated at over 20 per cent.

The Council rightly disclaims any desire to exceed its functions, and the present action is one of leadership only, in providing the outline of a plan by which the local marketing question can be effectively tackled. This leadership was not forthcoming from any other quarter, and if the plans are approved by the States, then it is quite easily possible for the word "export" to be deleted from the name of the Council and for a representative committee to deal with local marketing.

The Council has fully justified its existence by the capable manner in which export has been dealt with.

There can be no doubt but that local marketing can be as effectively handled.

The present proposal envisages an Australian Market Committee of the Council, comprised of representatives from the several States, the first function being that of conducting educational publicity to increase the consumption of Apples and Pears within the Commonwealth.

For the purposes of this educational publicity funds are necessary and such can be raised on the basis of a small per case levy collectable uniformly under Federal authority on all Apples and Pears offered for sale within Australia. A fractional levy per case will yield quite substantial revenue and the results would undoubtedly be the clearance of the stocks of the fruit at stabilised prices, while from the public point of view the benefit would be that of increased health.

There may be many difficulties yet to be surmounted, but it is certain that the proposals are on sound lines, constructive and farseeing: hence the confidence and enthusiasm of those who are associated with this forward movement, that their mutually beneficial efforts will the crowned with success.

PEAR "P. BARRY."

In addition to the Pear varieties already notified as being permitted to be exported in 1937, the variety "P. Barry" has since been officially included.

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NEPTUNE SPRAYS

● THE use of NEPTUNE SPRAYS—the world's finest is your guarantee against loss of profits. Make sure you use the correct sprays.

NEPTUNE RED SPRAY OIL
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NEPTUNE BLUESTONE SNOW
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(Prepared Pale Oil)
NEPTUNE WHITE SPRAYING OIL
(Summer)
GENUINE BLACK LEAF 40

Ask our local agent for a copy of our hand-book, "Clean Fruit" which gives a wealth of information on all spraying matters.

NEPTUNE OIL CO. LIMITED All States

lsect Pests and Their Control

ce by Entomological Officers, N.S.W. Department of Agriculture.

ying in February and March for Citrus Scales :: Tomato Mite :: Walnut Leaf Mite :: Coon Bug.

trus Scale Insects (Coccidae).

THE COASTAL AREA of New South Wales a number of different species of scale insects infest s trees, the commonest being e wax scale, white louse, purple , red scale, and brown scale. e may occur either as single inations, or else several species may present on the one tree. Control sures applied for one scale may be satisfactory for the other ies present, though where citrus s are also to be considered, the y programme may be modified to rol mites and certain scale pests he one operation.

umigation where practicable is to preferred to spraying for scale ct control.

te Wax Scale and Citrus Mite.

those districts where citrus mites troublesome, it is usually found an early hatch of white wax e also occurs, larval emergence g practically complete before the of December.

ime-sulphur 1 in 40 applied oughly about mid-December, using aitable spreader, has been found give an excellent control of both s and wax scale, the control being endent largely on the thoroughs of application. Two such applions at a fortnight's interval are gested.

his programme will also serve to k purple scale for a time, **but uld be followed in late February h an oil spray at 1 in 40. If wax e is not under complete control, should be added to the oil.**

xperiments over the last three rs have shown a

Double Oil Programme

e the most satisfactory method of trol where purple scale infestation severe. This consists of an appli.on of white oil 1 in 40 in late rember, followed by a similar spray late February. This schedule has been found to give excellent con of citrus mites, and, where the h of wax scale is early, to assist the control of this pest. Where scale infestation is heavy it may found possible to apply the first oil spray in early December with better results against wax scale, and with little loss of efficiency against purple scale.

In any case, the addition of 8 to 10 lb. washing soda to 40 gallons in the February oil spray will control the remaining wax scale.

Purple Scale and White Louse Scale.

This is a commonly occurring combination, and may be dealt with by either of the last two spray programmes, viz.: (1) lime-sulphur 1 in 40 about mid-December, followed by oil 1 in 40 in late February; and (2) oil 1 in 40 in late November, followed by a similar spray in late February.

Though either of these programmes gives complete control of white louse scale, the lime-sulphur followed by the oil is the better of the two. Usually, however, it is better to treat white louse scale as a separate pest and to apply a more concentrated lime-sulphur solution to the insides of the trees about May. If the infestation is likely to become serious it may be dealt with by using lime-sulphur—1 in 10 to 1 in 15, depending upon the strength of the lime-sulphur—on the insides of the trees and then applying the 1 in 40 solution of lime-sulphur over the outsides of the trees in November and December as already indicated.

Brown Scale and White Wax Scale.

This combination of scale is usually confined to a few trees in an orchard, but occasionally may form a general infestation, sometimes accompanied by red scale. In the coastal areas brown scale passes through more than one generation a year, and it is sometimes difficult to find a majority of the scales present in a suitable stage for treatment. However, it will generally be found present in the immature stages during December and early January, when the trees should be sprayed with either red or white oil at the rate of 1 in 40. If the hatch of white wax scale is early and even, good control of this pest may also be obtained by a late December spraying with oil.

The above illustrates methods used for advertising Australian Apples and Pears in Great Britain.

Light infestation of red scale will probably be held in check by such early spraying, but where the infestation is heavy it will be essential to apply a later spray of oil about March.

White Wax Scale.

This may be treated as indicated in the spray programmes suggested above, or else may be controlled by the addition of soda to the general scale spray of oil applied in February or March. The amount of soda required will be dependent upon the stage in development of the wax scales—about 8 lb. washing soda to 40 gallons being required when the wax is in the "peak" stages, usually about mid-February, and up to 15 lb. fresh washing soda to 40 gallons when the scale is well developed in late March.

Success in controlling this scale is dependent largely upon obtaining thorough coverage. Rain following a few hours after spraying may completely nullify the effects of soda spray. Where oil is not required for control of other scales the soda may be applied alone, but a spreader such as soap or oil should preferably be used. Red oil is most satisfactory for this purpose, and may be used at the rate of 1 gallon to 80 gallons of spray.

NOTES ON THE PURPLE SCALE.

(Lepidosaphes beckii.)

The purple or Mussel scale of citrus is common in the Gosford district, where it is probably the most serious scale pest. It is often confused with female white louse, to which it bears some resemblance. The adult female purple scale is very similar in shape to some grass seeds, and is often known to growers as "grass seed" or "carraway seed" scale.

It infests the wood, leaves, twigs and fruit, and may cause very severe injury to the tree when the infestation is heavy. It occurs principally in moist protected situations, and prefers dense, well-grown trees. Although it may be present on Lemons, it is rarely of importance, and is generally worse on Oranges and Grapefruit. The presence of this scale makes the fruit very unsightly.

The life history, briefly, is as follows:—

In the Winter the scale is usually in the adult condition, and during this period eggs are developed and laid. Hatching occurs in the Spring from September onwards, with the peak hatch during November. These scales become adult and deposit eggs during December and January, and young larvae appear in numbers in late January and through February, March and April.

The maximum hatch in this brood appears to be in late February and early March.

Three or more generations may be produced in a year, but two main broods occur.

Very little direct fruit surface infestation takes place until the end of Summer, the Spring brood larvae infesting the leaves and twigs and settling beneath the calyx lobes of the fruit. In February the progeny

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POWDER AND LIQUID

A Highly concentrated preparation of

SOLUBLE ARSENIC

READY FOR IMMEDIATE USE

The most effective and economical of all weedkillers. Definitely eradicates blackberries and all other noxious vegetation. Completely kills useless timber and prevents growth of suckers.

SUPPLIES OBTAINABLE ALL STORES. WRITE FOR PARTICULARS, DILUTIONS, ETC.

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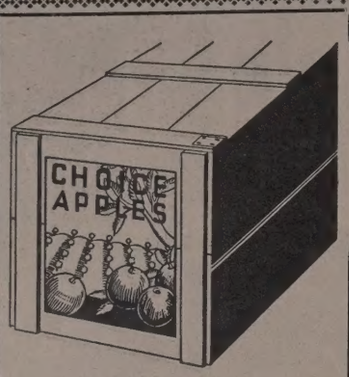


GOOD LABELLING
Demands
THE BEST PASTE

That's
DAVIS 333 ADHESIVE

THE BEST COLD WATER PASTE IN THE WORLD

Obtainable from all Hardware, Paint and other Stores.

from these scales, beneath the calyx, swarm down over the surface of the fruit and settle at the contact points between two fruits or else where leaf and fruit touch each other.

The period of development from the time of emergence as a larva until that individual lays eggs is about sixty days. These eggs take about twenty days to incubate and larvae appear about eighty days after the birth of the parent. The average number of eggs produced per female is 150.

For the control of this pest, see the earlier recommendations in these notes.

THE TOMATO MITE (Phyllocoptes lycopersici).

OWING TO THE UNUSUALLY dry conditions in the Spring and early Summer it is anticipated that Tomato mite infestations will be severe in mid-season and late crops, unless control measures are adopted.

The mites are extremely small, and only become visible on the foliage under magnification. Consequently, their presence in crops is frequently overlooked, although they may be causing serious damage. Hundreds of these very small, yellow mites may occur to the square inch of foliage. Their presence shortens the productive life of the crop very considerably. They feed on the surface tissues of the stems, the fruit and the foliage, reducing the vigour of the plants and causing shedding of blossoms and stunting of the fruit. Usually severe infestation does not show up before the first two or three trusses of fruit have matured, although occasionally plants are affected earlier, and the whole crop is lost.

Symptoms of Attack.

The first sign of infestation is a silvering of the foliage and a drooping and curling of the lower leaves. The stems and leaf stalks also have a smooth appearance due to destruction of the epidermal hairs by the mites. Later the stems and under-surfaces of the leaves become dirty brown in colour, and the skin of the fruit sometimes has a roughened, corky appearance. In the final stages of infestation the leaves wither and die and the plants become defoliated, except for fresh green shoots which appear at the top and base of the plant.

Infestation is not usually severe in districts where only Spring or Autumn crops are grown, but where planting extends over several months of the Spring and Summer, or of the Summer and Autumn, the later plantings are usually heavily infested.

Control.

Treatment for Tomato mite should not be delayed until the symptoms of damage appear, as by that time the plants will have suffered a severe setback and some loss of crop will result. In localities where the mite frequently occurs, treatment to prevent infestation should be a routine measure.

Seedbeds should be treated, and after transplanting, **the crop should receive at least two treatments, the first when the fruit commences to ripen and the second a month later.**

The cheapest and most effective method for control is spraying with lime-sulphur 1 in 100, but where Bordeaux mixture for disease control is used, lime-sulphur spray is inadvisable, as some foliage injury will result. Where Bordeaux mixture has been applied, wettable sulphur, 1 lb. to 12 gallons, may be used, or the plants may be dusted with equal parts of sulphur and lime.

Two Minor Pest

The Walnut Leaf-Mite (Eriophy tristriatus).

Recently at Batlow Mr. S. L. A man, Assistant Entomologist, obse ed leaves of Walnut trees showing festation by the Walnut leaf-mi Eriophyes tristriatus Nalepa.

These mites are invisible to the aided eye, but their feeding produ large blister-like swellings on upper surfaces of the leaves and y low or brown felty pads on the und sides.

They are known to occur in Euro America, New Zealand and Tasman but this is the first record of th occurrence in New South Wales. T mite is considered to be of little e nomic importance.

The Coon Bug (Oxycarenus luctuosu

During the present season th small native bugs have been unusua abundant in coastal and inland ar of New South Wales.

The adult bug is approximately inch in length, and is marked w black and white, the immature fo being blood-red marked with bla These bugs have, at times, been corded swarming in great numb on fence posts in inland areas. Th normally feed and develop in wee and as a rule do not attack cultiva crops. However, this year some sm amount of damage has been caused this insect, it having been found fe ing on Figs, Cherries, Nectarin Raspberries, etc.

It is considered that the unusua dry conditions, with a consequent l of herbage, have been largely resp sible for the bugs infesting cultiva plants.

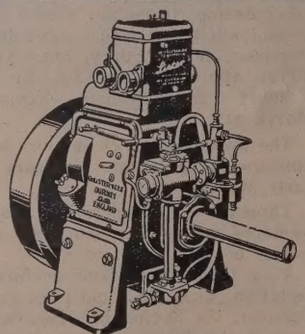
The best means of controlling pest is to dust infested plants wit mixture of equal parts of pyreth powder and 2½ per cent. nicotine d The two dusts should not be mixed gether until just before use.

—"N.S.W. Agricultural Gazet

NEW REGA SPRAY FACTOR

Rega Products Ltd., for m years located in Leichhardt (Sydn will soon go into occupation of a l and handsome factory, which is b completed at Marrickville.

The new building has frontage three streets, ensuring ample nat light for all departments. Ther a total floor space of 25,000 sq. ft. structure is costing in the vicinit £20,000.



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Lister BRITISH BUILT

CRUDE OIL ENGINES Cut 70% off Fuel Cost

1. **Fuel for 3-h.p. costs 1½d. per hour. 5-h.p. costs 2½d., 7 h.p. 2¾d., and up to 38-h.p. as marvellously low. Compare with your costs. It might pay to sell or scrap your present power unit and get a Lister.**
2. **Starts instantly. A swing of the flywheel and she's off—from dead cold, too!**
3. **No starting gadgets—no magneto, no spark plugs, no carburettor—just nothing to give trouble.**
4. **Absolutely reliable, steady power—suitable for driving anything anywhere.**
5. **Lister Diesels are EXTRAORDINARY—they are really wonderful engines. With an engine of poor design and cheap make, the cost for repairs and wasted time will soon bring the price far above a trouble-free, long-lasting Lister.**

Prof. Huckle, Massachussets Institute of Technology, U.S.A., says he considers the Lister the most important and most successful development in small Diesels.

We can show you great savings on your cost to store fruit. **Ask for Information.**
Please Mention This Advertisement.

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Spraying Oils
(Red - - White - - Pale)

30 Years ago . . .

the Vacuum Oil Company pioneered the use of refined petroleum oils for the control of orchard insect pests in this part of the world, and ever since, have conducted field and laboratory tests and trials, to improve, not only the oils themselves, but also the technique associated with the efficient use of these products.

A vast wealth of knowledge has been accumulated concerning orchard insect pests, their control, habits and eradication. We suggest that if you are confronted with any individual problem that you communicate with our nearest branch office. Our wide experience is freely at your disposal.

VACUUM OIL COMPANY PTY. LTD.

Oriental Peach Moth

PEACHES, ALMONDS, APRICOTS, PLUMS, PEARS AND QUINCES ARE ATTACKED.

Nicotine Sulphate Recommended for Control, plus Orchard Hygiene.

Tests with Parasites.

BECAUSE OF THE RAVAGES of the Oriental Peach Moth (Cydia molesta), the Council for Scientific and Industrial Research is earnestly seeking control methods. In their latest report, the C.S.I.R. states that during recent years the loss of fruit due to moth infestation has steadily increased, culminating in the serious outbreak in the season 1933-34. The loss in the 1934-35 season was 20-25 per cent., but in 1935-36 was estimated at 50-52 per cent., which was almost as serious as the outbreak of 1933-34. These facts suggest that heavy infestation has become normal and that outbreaks are unlikely to be merely sporadic. These losses are so great that they threaten the existence of the canned Peach industry.

Although Peaches are the chief fruit attacked by the moth, Almond fruit and twigs, Apricot fruit, Plum twigs, Pears and Quinces may also be attacked. The larvae of the first and second broods cause extensive damage to young succulent tips, a single larvae attacking three tips in the course of its feeding period. The larvae of the third and fourth broods attack the fruit. Injury to Quinces and late season's growth on young Peaches and Almonds is caused by the fifth brood larvae.

The special difficulty of control by spraying is due to the habits of the larvae and the vigorous growth of the Peach. New tissues are rapidly produced throughout the season, so that cover sprays cannot long remain effective. This rapid production of new growth, and the variation in the time of brood emergencies in different orchards throughout the district, makes it necessary to time very accurately the application of sprays, so that each spray is applied at a time when the vulnerable stages of the insect are present.

The time for spray application may be determined by the use of lures in the orchard, 10 per cent. "Golden Syrup" in water being the best of those tested.

There are two vulnerable stages against which control can be directed —the egg, and the newly-emerged wandering larva; any toxic spray material directed against these stages must act both as an ovicide and as a larvicide.

Only nicotine sulphate has been found to be effective in both these capacities. Field experiments with this substance have shown it to be a satisfactory toxic agent. Its chief disadvantage is that its effective period of toxicity is too short.

During 1935-36 a substance named Kolofog, which is a bentonitic clay fused with sulphur, was imported from America in a attempt to "fix" the nicotine sulphate and so lengthen its toxic period. Previously it had been found in America that this substance increased the toxic period of nicotine up to 32 days. Tests of a mixture of this substance and nicotine sulphate on foliage sprayed in the field showed that under Australian conditions toxicity was maintained up to 29 days, and that it acts as a deterrent to oviposition, as an ovicide, and as a larvicide. Dry-mixed lime and sulphur together with nicotine sulphate was found to be the next best spray; but the toxic period of the nicotine was not increased. All the accumulated evidence shows that nicotine does exert a controlling influence on the moth.

Additional methods of control, which are under investigation, and which have given indications of being decidedly helpful are bandaging the trunks of trees, deep cultivation, and general orchard sanitation.

Biological Control.

Two parasites, Macrocentrus ancylivorus and Glypta rufiscutellaris, have been successfully introduced from America and small numbers have been liberated in a heavily infested area. Further introductions from America will be made; and it is proposed to breed large numbers in the Goulburn Valley prior to liberating them. In America it has been found that M. ancylivorus is quite successful in many States; but there are, however, areas where it has failed to establish itself and effect a control of the Oriental Peach Moth. It is very sensitive to low humidities and high temperatures; and, while it is probable that this parasite may be able to establish itself in the Goulburn Valley, no guarantee to this effect can be given. In America Glypta rufiscutellaris requires an alternative host, which lives in a weed to carry it over part of its life-cycle. As the alternative host is not present in Australia, it is unlikely that this parasite will establish itself, unless it can find some native alternative host to replace the American one.

ORIENTAL PEACH MOTH.

Outbreak in N.S.W.

CONSIDERABLE CONCERN has been created on the Murrumbidgee Irrigation Area of N.S.W. owing to the outbreak of Oriental Peach Moth in the Mirrool (Griffith) section. A proclamation has been issued by the Water Conservation and Irrigation Commission prohibiting the entry of any fruit or second-hand container or package into the Yanco (Leeton) area.

The District Entomologist, Mr. E. J. Watson, recently visited the Goulburn Valley in Victoria, where he studied the methods which were being employed to control the pest there. These included the use of the nicotine spray and tests were being made with parasites.

The Department of Agriculture is doing its best to prevent the spread of the pest to clean orchards.

Life history studies, by means of traps and banding, are being conducted, and parasites are being collected for liberation in the more seriously infested orchards in the Griffith Area.

CHOOSING A TRACTOR.

Points That Should Be Studied.

A tractor is distinctly a business investment, and the man who buys one should be very careful to see that it is of the size, power and type suitable for the work he requires of it. To assure himself on this important point his best plan is to inspect a range of tractors from which a selection can be made of a unit built for working large, medium, or small farms, for orchard or vineyard work or for whatever kind of property the purchaser is operating.

This is the individual problem that confronts every intending tractor buyer; but he will soon be able to settle it with complete satisfaction to himself if he examines a full range of modern tractors such as International Harvester provides in the McCormick-Deering tractor line. There are no fewer than fourteen different tractors in the McCormick-Deering line. They are all powered for both field and belt work, and each type has been produced, in the light of experience with actual working conditions, to meet a well-defined set of farming requirements. The wheel types are available with steel wheels or pneumatic tyres, while there are within the range both wheel and crawler types, which operate on kerosene fuel, and others which work on Diesel fuel.

Thousands of these tractors are playing an indispensible role in every grade and style of agricultural enterprise to-day. The jobs they do and the working cost of each of them are matters of constant study by the International Harvester organisation, whose representatives throughout the country are able to assist any agriculturist or pastoralist in selecting the tractor that will give him the particular service he needs on his individual property.

AGRAL 2

The Wetter and Spreader for SHIRLAN AG, Bordeaux Mixture etc.

AGRAL 2 used in correct combination with practically every horticultural spray has been proved the best wetter and spreader yet evolved.

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AGRAL 2

Distributors:
RAMSAY & TREGANOWAN LIMITED,
469 Latrobe St., Melbourne, C.1.
A Produce of Imperial Chemical Industries of Aust. & N.Z. Ltd.

News In Brief

Pear growers around Renmark achieved great success in codlin moth control by united district action—the appointment of a temporary inspector to see that spraying was effectively done and the grubbing out of certain trees.

:: :: :: ::

Root stock experiments with Apples, Pears and Plums are being conducted by the C.S.I.R. Thirty-two stocks for Apples are being tried, four for Plums and five for Pears. In preliminary nursery experiments for Apples on their own roots, two Apple varieties—Marjorie Hay and Mona Hay rooted satisfactorily from cuttings of one year wood.

Black - Spot • Brown - Rot • Mildews

Can definitely be controlled

BY INCLUDING

COOPER'S

COLLOIDAL SULPHUR

In Your Spray Programme

DILUTION: 1 LB. – 50 GALLONS WATER.

It may be used in combination with most other Spraying materials if mixed according to directions. Vine growers may use it in combination with their usual Copper sprays in districts where Oidium is prevalent.

CHEAPER AND MORE EFFECTIVE THAN ANY OTHER FORM OF SULPHUR.

COOPER PRODUCT

Sole Proprietors:

William Cooper and Nephews [Australia] Limited

4 O'CONNELL STREET, SYDNEY, N.S.W.

Victorian Distributor: F. R. MELLOR, 440 Elizabeth Street, MELBOURNE.

Summer Spraying for Codlin Moth

Arsenate of Lead or White Oil

Spraying Times Must be Accurately Determined by Observance of Peak Flights

Growers of Apples and Pears are now busy putting on their cover sprays for codlin moth control.

The Victorian Department of Agriculture has been conducting tests in this connection, and their recommendations include:—(1) continuance of arsenate of lead sprayings, time of application to be determined by moths caught in lures or emergence from bands; or 15-20 days after the previous lead sprays.

White oil is recommended as an ovicide—but not the use of both lead and oil, because of the great difficulty in the removal of the residue.

With oil spraying the great point is the determining of the time for the application, which must not be by guesswork, but by actual observation of the moth flights as revealed by the lures.

The effective ovicidal period of white oil sprays does not appear to exceed ten days.

For February oil sprays the time of application should be as near as possible to the peaks of emergence—or not to exceed ten days after the peak of emergence.

In practice it is noted that the first oil spray is given at the middle to end of December if the moths are prevalent (proportions 1:60). If moths are not prevalent this spraying is delayed until early January.

The Second Oil Spray.—Apply second oil spray 1:60, 15 to 20 days after 1st oil spray.

Third Oil Spray.—Apply third oil spray, 1:60, about 15 to 20 days after second oil spray.

This application should be made at or immediately after the peak of emergence of moths of the 2nd brood.

Fourth Oil Spray.—Apply fourth oil spray 15 to 20 days after 3rd oil spray. (This will probably be applied at the end of February or in early March.)

For late varieties, 5th oil spray may be necessary.

Destruction of Weeds

Danger of Using Sodium Chlorate

IN a circular issued by the Vermin and Noxious Weeds Branch of the Victorian Lands Department to inspectors throughout the State, attention was recently directed to the dangers associated with the use of sodium chlorate in the destruction of weeds. Several serious accidents to persons using this chemical have come under the notice of the Department.

In New Zealand two deaths have been caused owing to sodium chlorate drying on the clothing of farm workers and bursting into flame. The water quickly evaporates, leaving the chlorate in close contact with the fibres of the cloth, and even a blow, or heating by friction, may cause a fire or an explosion.

Workers using this weedicide must be given overalls, gum boots, and gloves for use during spraying, and any spray lodging on them should be thoroughly removed by washing. The chemical should be transported and mixed in metallic vessels, and any stick or materials coming in contact with the mixture, or used for cleansing vessels, should be burned in order to prevent the possibility of fire. It is further pointed out that should sodium chlorate dry on vegetation, friction caused by the hoofs of animals may cause fires to break out where grass is dry. During periods when forest regulations prevent the lighting of fires in the open, other weedicides should be used. Special precautions are to be taken to prevent fires arising from the use of sodium chlorate in the Gippsland and Otway districts during the bush fire period.

Messrs. Victor Leggo and Farmers Ltd., Melbourne, advise that their special product, "Arzeen" will accomplish all that is claimed for sodium chlorate, with no risk, and at a much lower cost. "Arzeen" is described as a highly concentrated preparation of arsenic in a completely soluble form. In using this material there is no danger from fire, as it is non-inflammable. Arzeen is in a very handy form, and dissolves quite readily in cold water. The Arzeen liquid contains 48 per cent. arsenic and the powder 80 per cent., and owing to its high concentration it will stand a very heavy dilution, which makes it more economical to use than most other so-called weed and tree killers. There is one distinct advantage in using it for tree-killing, inasmuch that it not only kills the tree completely, but prevents the growth of suckers, which is of importance to land owners. The manufacturers are large contractors to Government Departments, such as the Vermin and Noxious Weeds section, which section have used Arzeen for the eradication of all classes of noxious vegetation, including Blackberries, Ragwort, etc., with very satisfactory results. Victor Leggo and Farmers will gladly supply any information required. Arzeen can be purchased through your usual purchasing avenues.

LETTERS TO THE EDITOR

Controlled Marketing Advocated

The Editor, "Fruit World,"

Dear Sir,—

After careful perusal of Mr. R. Serpell's letter re the forthcoming referendum, I venture to say that the full text of his letter seems to be an attempt to show that there is nothing comparable to individual freedom with regard to marketing fruit. This practise has the uncontrolled industries still muddling along, so much so that even now export bounties are requested to bolster up the unfortunate industries. Even these prove futile.

Any person who has made a study of this vital question must surely appreciate the fact that the dried fruit industry has been worth while to the nation and also the individual, and this through effective control.

The dried fruit industry has, throughout this "controlled" period, paid award rates of pay to its workers. Uncontrolled industries do not do this.

Each grower receives his due share of the various markets and the result is prosperity to all.

The "freedom" system may have suited our forefathers' time, but they do not suit this nationalistic age, and, furthermore, it is not to the credit of those who intend to vote "No" to carry on this futile, obsolete muddling.

Mr. Serpell asks where are the disorderly marketers. Need he look far?

How often have out leading fruit shippers and advisors, when returning from English and Continental markets stressed the absolute need of some control re quantities, dates of arrivals, types of varieties to send and various other factors? This can only be accomplished by compulsory control.

The same applies to the interstate trade. Agents wire quoting high prices and because of "individual freedom" any quantity can be sent, with queer results. This does not help the consumer, as glut prices follow famine prices in inglorious fashion.

Compare this to the conditions obtaining in the dried fruit industry, and the points are all in favor of control. However prosperous the "happy-go-lucky" method has proved to some to the majority it has left them crying in the wilderness. No Governmental delay or "red tape" officialdom mars the working of the A.D.F.A., and the growers know the benefit of it.

The grower's business should be to grow the fruit, and the marketing side of the enterprise should be left to the control boards and associations, who would and can manage the business in a fitting manner. Moreover, this is the only way by which standardisation of packing and grading, etc., can be obtained. Steady prices are maintained, and the whole of the industry is put on to a business-like basis.

In the case of dried fruits a home consumption price is fixed which is quite reasonable as we compete on the world's markets with low wage paying countries which sometimes sell their fruit at prices totally inadequate to cover our production costs. This is because of our built-up standards and it is to be most fervently hoped that these standards will be maintained to the mutual benefit of all. It is our right and heritage.

Yours, etc.,

M. MUIR.

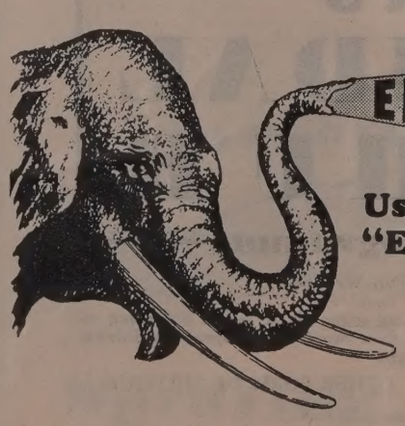
Merbein West, Vic., 25/1/37.

Fruit Trees

GOODMAN'S

Reliable Trees in all leading varieties available at keenest values. Famous for 47 years, Goodman's Trees still lead for both quantity and quality of crops. Orders carefully filled and promptly despatched. Write for Catalogue.

C. J. GOODMAN, Picnic Point Nurseries, BAIRNSDALE, Vic.



ELEPHANT BRAND SPRAY

Use "ELEPHANT" Brand Arsenate of Lead—Quality Stands Alone.

Insist Upon it!

FRUIT GROWERS generally have come to depend on "Elephant" Brand Sprays. They find them absolutely reliable, efficient and of guaranteed quality.

We can supply all your Spray Requirements—ARSENATE OF LEAD (Paste or Powder), SPRAY SPREADER, SPECIAL COPPER MIXTURE, LIME SULPHUR, WHITE OIL, NICOTINE SULPHATE, RED OIL, Etc.

Extract "BETTER FRUIT," U.S.A., February, 1934: "Idaho Spray Programme for Codlin Moth Control, 1934," by Dr. Claude Wakeland, Department of Entomology, University of Idaho. Experiments in the State for the past six years have shown that LEAD ARSENATE is the best, as well as the most economical insecticide that we have tested for Codlin Moth control. Entomologists are agreed that there is no substitute for Lead Arsenate that can be recommended to the public.

JAQUES PTY. LTD., Are Actual Manufacturers and Distributors of "ELEPHANT" Brand Sprays.

Factory: MADDEN GROVE, BURNLEY, E.1, MELB., Vic. Telephone: J 2008.

City Office: 31 Queen St., Melbourne. Telephone: Cent. 756

INTERSTATE AGENTS:

N.S.W.—Producers' Distributing Society Ltd., Valentine and Quay Streets, Sydney.
Q'ld.—Buzacott's Ltd., Adelaide Street, Brisbane.
S.A.—Silbert, Sharp & Bishop Ltd., Rundle St. E., Adelaide.
W.A.—Westralian Farmers' Ltd., 569 Wellington St., Perth.
Tas.—R. Nettlefold Pty., Hobart. Bell & Gerrard, Launceston. Cocker, Bell Pty., Devonport.
N.Z.—Pizzey, McInnes Ltd., Box 1114, G.P.O., Auckland.

Canned Fruits News and Notes

MINIMUM PRICES FOR CANNED FRUIT.

1937 Export Season.

Great Britain.—The following prices have been announced by the Canned Fruits Control Board as the minimum for canned fruit shipped to Great Britain during 1937. As a comparison, the prices for 1936 are shown in brackets.

Apricots.

	No. 2½.	No. 1.
Choice	7/6 (7/9)	4/9 (5/–)
Standard ..	7/–	4/6
Seconds . ..	6/6 (6/7½)	—

Peaches.

Choice	7/– (7/1½)	4/7½ (4/9)
Standard . ..	6/6 (6/4½)	4/4½
Seconds	6/–	—

Pears.

Choice	7/- (8/3)	4/9 (5/6)
Standard . ..	6/6 (7/6)	4/6 (5/–)
Seconds	6/– (7/1½)	—

The prices are per dozen tins, c.i.f., United Kingdom ports. The drop in prices has been forced upon the Board because of exceptionally heavy U.S.A. shipments quoted at extremely low prices, and the large carryover of Pears from last year. The above prices compare favorably with those of other countries.

New Zealand.—Shipments to New Zealand may be made up to October 31, when the following prices will operate. Prices are per dozen tins, f.o.b. Australian port.

	No. 2½. Stan-dard.	Seconds.	No. 1. Stan-dard.
Apricots ..	7/7½	7/3	5/6
Peaches	7/4½	7/–	5/3
Pears	7/9	7/4½	5/7½

STOCKS AT CLOSE OF 1936.

Local Consumption Compared.

The statistical return prepared by the Canned Fruits Control Board shows that on December 31, 1936, there were, unsold in Australia, 126,638 cases Apricots, 13,572 cases Peaches, and 222,460 cases Pears, or total stocks of 362,670 cases.

The carry-over from 1935 was 71,297 cases, and the total quantity processed was 2,221,430, making the quantity available 2,292,727 cases.

Since 1,133,844 cases were exported in 1936, by deducting the carry-over stocks of 362,670 cases, the balance represents the quantity (796,213 cases) estimated for consumption in Australia.

As showing how Australian consumption fluctuates, the following record is presented. The figures represent cases containing 2 doz. 30-oz. tins or equivalent:—

1929, 1,010,130 cases; 1930, 651,932 cases; 1931, 624,114 cases; 1932, 443,998 cases; 1933, 634,374 cases; 1934, 853,928 cases; 1935, 693,054 cases; 1936, 796,213 cases.

SUGAR CONCESSION COMMITTEE.

Review of Annual Report.

In presenting the fifth annual report of the Fruit Industry Sugar Concession Committee, which covers the year ended August 31, 1936, Mr. A. R. Townsend, Chairman, reminded the Government of the substantial development of the export trade in canned fruits since the Committee was created in 1931, but more particularly within the last three years.

In the five years of the Committee's operations, it has disbursed £1,133,846 in sugar rebates and special assistance for export of fruit. The overhead, during that period, approximated £8,000.

The report shows that in that period the minimum prices paid for canning fruit have consistently risen, and with the exception of Clingstone Peaches and Keiffer Pears, the prices paid in 1936 were higher than in any previous season. In the case of berry fruits, no variety suffered a reduced price in 1936, and many minimum prices were raised.

32,430 tons of sugar were used in the manufacture of fruit products during the year. This is the greatest quantity used since the committee began to function. By States the distribution of sugar rebates was:—Victoria, 43.90 per cent.; N.S.W., 22.28; Tasmania, 16.79; Queensland, 9.18; S.A., 7.17; and W.A., 0.68 per cent., representing a domestic sugar rebate of £71,347/4/4. The amount of the export sugar rebate for the same period was £78,627/7/6 in approximately a similar distribution by States.

A stand at the Australian Exhibition conducted by Messrs. Lewis Ltd., Manchester, in October, 1936.
(Photo. by courtesy Department of Commerce.)

Advertising Helps Sales.

During the year the Committee expended £490 on advertising canned fruits in the Commonwealth. 250,000 recipe books were distributed, and a limited press advertising campaign was undertaken. There can be no doubt that this programme was worth while, and should be continued and extended.

Research Work.

The report stresses the importance of research work being continued. The production per acre in Australia compares unfavorably with that in California and Hawaii, and the control of fruit pests must receive more attention. Increased yields, improved quality and lower costs of production are the essentials to successful competition with other producing nations.

The Codlin Moths' Worst Enemy—

Orchardists, who for many years have sprayed with "Aero brand" Arsenate of Lead, still say that it is the most effective Arsenate of Lead they have ever used.

Its exceeding fineness and lightness in texture, its high covering and killing power, the ease with which it mixes and remains in suspension in the spray tank, place "Aero brand" in the front rank of all Arsenates of Lead. Although of such superior quality, it costs no more than inferior arsenates.

Interested growers may obtain full particulars from the Manufacturers or from any of the Interstate Agents listed below.

BICKFORD'S "Aero" BRAND ARSENATE OF LEAD

By every Test Bickford's "AERO" Brand is Best

INTERSTATE AGENTS:

VICTORIA—
Ramsay & Treganowan Ltd.,
469-477 Latrobe Street, Melbourne.

WESTERN AUSTRALIA—
Felton, Grimwade & Bickford Ltd.,
397 Murray Street, Perth.

NEW SOUTH WALES—
Buzacott & Co. Ltd.,
7-11 Market Street, Sydney.

QUEENSLAND—
Buzacott (Queensland) Ltd.,
443 Adelaide Street, Brisbane.

TASMANIA (Northern Districts)—
Gardner & McKenzie Pty. Ltd.,
64 Cameron Street, Launceston.

TASMANIA (Southern Districts)—
Port Huon Fruitgrowers' Co-op. Association Ltd.,
Davey Street, Hobart.

"SPREGAN"

Colloidal Liquid Sulphur

For efficacious treatment of BLACK SPOT, BROWN ROT, DOWNY MILDEW, OIDIUM, and all Fungus Diseases for which Sulphur in any form may be used as a control.

SAFE - - - - Because it Prevents Leaf Scorch.
CERTAIN - - Because it gives definite control of Fungus Diseases.
ECONOMICAL Because it ensures maximum results at less cost than other forms of Sulphurs

As a Precautionary Spray, 1 lb. of "SPREGAN" to 100 gallons of water.
As a Combatant Spray, 2 lb. of "SPREGAN" to 100 gallons of water.

Manufacturers COLLOIDAL SULPHUR PTY. LTD.
Wholesale and Retail Depot - - 466 Swanston Street, Carlton, N.3, Victoria.

CANNING IN EUROPE

Rapid Development Reported.

In recent years canners of foodstuffs in European countries have come to appreciate the fact that canned food is becoming deservedly popular, and have steadily increased their contribution to this condition. The larger companies in England, France, Holland, Belgium and Germany are all swinging over to mass production, uniform gradings and are supplying the fruit that is most popular, in the sizes that are equally popular and are improving manufacturing methods.

Supplementing the development of the canning industry, educational efforts have been undertaken to convince the buying public of the safety, ease, and economy of canned fruits.

Laboratories are busy telling the housewife what canned fruit contains in food values, and how easily it can be prepared for the table. In England most of the fruit canned is of the "small" variety, and gives little competition to the Australian main varieties—Apples, Pears, Peaches, Apricots and Pineapples.

"What sort of fish fertiliser is used in a vegetable garden?" asks a reader. Judging by what we keep turning up in ours, the last tenant favored salmon and sardines, in tins.

TOTAL EXPORTS DURING 1936

OVER A MILLION CASES

The Secretary of the Canned Fruits Control Board advises that the full record of exports from January 1 to December 31, 1936, is as follows. The figures represent dozens of 30-oz. tins (or equivalent).

Country.	Apricots.	Peaches.	Pears.	Fruit Salad.	Pine-Apples.	Total.
U.K.	265,452	905,846	711,340	—	17,675	1,900,313
N.Z.	43,986	70,702	6,918	34	4,677	126,317
Canada	24,036	174,446	18,240	6,704	24,766	248,192
East	7,620	17,212	13,260	2,462	160	40,714
Miscellaneous	1,354	3,234	4,042	94	578	9,302
Total	342,448	1,171,440	753,800	9,294	47,856	2,324,838

LIVERPOOL WANTS MORE AUSTRALIAN CANNED FRUITS.

Visitor Says Quantity Negligible.

In a letter which appeared in the "Herald" recently, Mr. Stanley Foster, Secretary of the Liverpool and District Dairy Farmers' Association, states that he is amazed when he compares the tremendous volume of lovely fruit grown in Australia with the negligible quantity of Australian canned fruit that is sold in England.

The demand for canned fruit in England is enormous, he says, and sales are increasing every year, and he wonders why our canned fruits are so little known there. He concludes his letter with the following significant challenge: "I feel confident that if such fruits (Peaches, Pears, Apricots, Pineapples, Cherries and Plums) were picked, canned and packed to suit the English taste, the Home market could be captured and kept equally as well as the popularity gained with your Sultanas."

Unfortunately he does not say what would "suit the English taste," or how his charge that Australian canned fruits are little known can be met. It is felt here that the Canned Fruits Control Board and its London distributors are doing a good job, yet if a man with Mr. Foster's facility for knowing trade conditions affirms that our canned fruits are little known in England, either he does not know what he is talking about or new and larger markets in the provinces are not being exploited as they should.

TRADE WITH CANADA

Delegation Visits Australia.

Evening up Trade Balance.

The Canadian delegation at present in Australia to discuss trade matters with the Commonwealth Government is particularly welcome since it gives personal and official conference with the parties concerned. Mr. W. D. Euler is heading the delegation and is Minister for Commerce in the Dominion Government. Accompanying him are Dr. L. D. Wilgress, Director of Commercial Intelligence and Mr. J. S. McDonald, Secretary of the Department of External Affairs, with Mr. F. Sim, who is Secretary of the delegation.

The Australian Trade Commissioner in Canada, Mr. McGregor, is also in Australia and will take part in the discussions that take place with the delegation.

Up to date, Australia has done well in the Canadian market with dried and canned fruits, a protective duty allowing Australia to compete with U.S.A., thus Australian products in these lines have greatly increased in recent years under concession rates. In addition, Canada uses a lot of Australian wool, but against her purchases of Australian products must be put a tremendous export trade with Australia in newspaper and automobiles, which give her a balance of trade with exports to Australia worth four times as much as imports from Australia.

During the visit of the delegation, many matters will be brought forward for consideration. Australia wishes to arrange concessions that will result in increasing her sales to Canada by another £1,000,000 per annum. Even this will not nearly approximate the value of goods taken by Australia from Canada.

The many minor difficulties that confront those who supply canned fruits for Canada will probably be ironed out as a result of conferences between the Canned Fruits Board and the delegation. Standard sizes and packs and uniform labelling will be agreed upon and suggestions offered by the delegation as to the smooth working of reciprocal trade between these two great British outposts.

CHERRIES AND PLUMS FOR EXPORT.

Messrs. Pitts and Lehman Ltd., fruit exporters of Sydney, N.S.W., report that they shipped from Sydney per the "Imperial Star" on December 12, 1936, 160 boxes of Cherries to London. They arrived after six weeks' voyage in excellent condition, with only slight shrivel, and realised up to 5/- per lb. These Cherries were packed in Messrs. Pitts and Lehman's special patent punnet case. They are also shipping 10,000 boxes of Plums to London this season in the same package, and are awaiting report of sales and prices.

Messrs. Pitts and Lehman propose to export stone fruit from Victoria and New South Wales to Great Britain and other markets next season. They are to be congratulated on their enterprise in pioneering this effort and enquiries are invited from growers at all times. Their Victorian representatives are Messrs. R. M. Gibson Pty. Ltd., 200 Queen-street, Melbourne.

Important experiments relating to fruit growing and primary industries are being conducted by the Council for Scientific and Industrial Research. Excerpts from the annual report are published in this issue.

In Preparing Your Bordeaux Sprays Use . . .

E S A BLUESTONE

— Manufactured by —

THE ELECTROLYTIC REFINING & SMELTING COMPANY OF AUSTRALIA LTD.

PORT KEMBLA, NEW SOUTH WALES.

The Right Material for Plant Disease Prevention and Control

GUARANTEED 99% PURITY

GRADES—Mixed Crystals, Fines, Granulated (Snow), Packed in Suitable Containers for Growers' Requirements.

Agents for All States: ELDER SMITH & COMPANY LIMITED, All Capital Cities.

BOOKLET—"Better Yields by Spraying with E S A Bluestone" obtainable on application to Elder Smith & Co. Ltd.

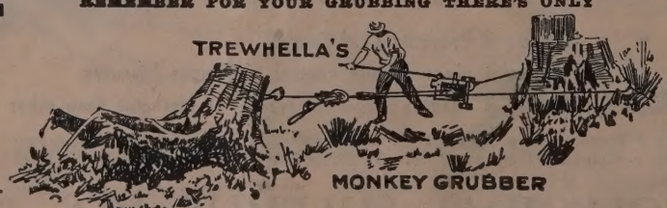
ARE YOU GRUBBING?

Previous experience had convinced me that to be really efficient a grubbing machine should have ample power and ropes that will meet the heavy demands required of them. I found that shovel and axe work is very costly either by itself or in conjunction with a machine. The machine that offered these features, with a host of others, was THE "MONKEY" GRUBBER.

It gave me the power of 260 pairs of hands in a simple and compact form; the lever is short, so that I am able to stand firm-footed and get the full stroke. There are two speeds in the machine, as well as an automatic release that allows me to let off a strain, or as the machine will work in any position, it comes in for all jobs that would require a chain block. It is taken to the job on a pair of wheels like a barn truck, and is rigged for work in a few minutes. The ropes are in lengths that I find easy to handle, and each one is fitted with hook and loop couplings, so simple and absolutely IT for effectiveness. The makers have included a sturdy snatch block with a novel method of securing to the ropes, and also a fine type of firm gripping rope shortener. The latter makes it very easy to accommodate the lengths of rope to the tree or stump being pulled, and is quickly released from the rope. The combination of so many time and labor saving features makes the "Monkey" Grubber a superior grubbing outfit.

REMEMBER FOR YOUR GRUBBING THERE'S ONLY

TREWHELLA'S



MONKEY GRUBBER

H. H. HINDS, 225 Clarence Street, Sydney.

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A. G. WEBSTER & SONS, Hobart & Launceston.

Leading Stores and Merchants, South and West Australia.

TREWHELLA BROS. Pty. Ltd. Trentham, Vic.

nportance of over Crops . .

Now is the Time for Planting Seeds For Green Manuring.

S, BEANS, OATS, BARLEY, RAPE, AND SUBTERRANEAN CLOVER.

y Frank M. Read, M.Agr.Sc., Chief Inspector of Horticulture, Victorian Department of Agriculture.

S THE TIME has arrived for the planting of cover crops for subsequent turning under as green ure, the following hints from Mr. k M. Read, M.Agr.Sc., Chief Intor of Horticulture, Victorian Dement of Agriculture, will be found iul.

ese notes appear in Mr. Read's nt contribution on the subject of fertility in the orchard, published ne "Victorian Journal of Agricul-"

F. M. Read, M.Agr.Sc.

Organic Matter.

veryone is agreed that, for an ard to maintain fertility, the supof organic matter must be mained. In the natural state the soil orts a very varied population. e are first of all the trees, ndly beneath them are the surplants, and within the soil are teeming millions of tiny creas, far too small to be seen by naked eye, and known under the eral name of soil organisms. rcharding, as it is generally prac in Australia, by clean cultiva and frequent stirring of the soil he hot summer months, undoubtly tends to upset the balance of ure by the elimination or, at all nts, great reduction in the growth the second group, the surface nts.

he life and decay of the surface nts provides most of that organic ter which is required by the soil anisms in order that they may rish, and it therefore follows that he surface plants are reduced and soil organic matter or humus is leted the soil's population of orisms declines.

he gravity of this change may be erstood when it is realised that it principally due to the life proes of the soil organisms that the nutrients become available to trees, and so, as their number s, soil fertility inevitably dees also.

t can therefore be taken as a im that **the yearly ploughing un- of a liberal amount of green stuff a first essential in orchard manment**, and it is almost as true t where the growth of natural en stuff is abundant and is plough- under suitably, the position on that nard is generally quite satisory.

Provision of Green Manure.

here would appear to be three n methods of providing soil humus in addition to the application of farm yard manure and straw, and so on:—

1. We can sow a crop of **Peas, Beans, Oats, Barley, Rape,** or, in fact, any crop which will grow well and give a good bulk within a few months.

In general, the leguminous crops are preferable when they will grow strongly; but if they will not thrive the crop most suitable to the district should be sown. It is essential that such a crop be sown early so that it secures a good start before the cold weather comes. March is the best month from this point of view. I know many orchardists will say that they rarely have time to put in a green crop, and that, any way, harvesting operations extend into March, and later still, so that if a crop were sown it would be trampled on and spoiled. It is undeniable that some orchardists do, nevertheless, manage to sow the crop satisfactorily, generally by doing alternate rows in alternate years, so that there is still room to reach every tree without walking or driving over the sown area.

2. We can establish such a plant as **Subterranean Clover,** which will reseed itself naturally. This has been done with apparently satisfactory results. There does not appear to be much difficulty in reseeding subterranean clover when it is ploughed under, as is the general rule at present, in September or later, for the plants go on maturing after ploughing, and until the surface is broken down by the cultivators and harrows. But the tendency in many districts now is toward earlier ploughing to avoid ascospore infection in the control of black spot of Apples, to improve conditions for fruit setting, and to minimise competition for soil moisture between trees and greenstuff, and so on. If this desirable tendency be followed, therefore, it would be wise to leave the unploughed strips of clover between the trees until the seed has formed.

3. The third alternative which may be useful as a stop-gap, but which would not appear to be as permanently satisfactory as the two above, is to allow the miscellaneous herbage to grow by ceasing cultivation in late February or early March.

This can probably be encouraged by top-dressing with artificial fertilisers in Autumn.

Super. or sulphate of ammonia, has in general given most noticeable results to date.

The final choice between these two fertilisers should be made after trial. On the whole, super. tends to be more generally effective for this purpose in the northern orchards, while a nitrogenous manure, such as sulphate of ammonia, is more usually effective in the south of the State. These results, however, depend largely on the type of herbage. Clovers seem to prefer super., while capeweed responds more usually to nitrogen. The results from grasses are variable.

Symptoms of Deficiency.

In the case of Apples the experiments conducted in this and other countries enable the appearance of the trees to be used as a fairly accurate guide to the exact fertiliser to be added in each case of faulty growth. Lack of **nitrogen** results in very restricted growth, reddish bark, small yellow-green leaves, which develop bright yellow tints before falling and fall, particularly at the base of the tree, very early.

Lack of **phosphoric acid** under experimental conditions, although it has never been noted in the field so clearly as in the case of nitrogen, results in poor growth, small and very narrow dark-green leaves, with a tendency to develop purple colored margins. These leaves usually develop very bright tints before falling. They tend to defoliate very early, and bud burst in the Spring is usually very delayed. Dying of buds is very prevalent.

Lack of **potash** does not restrict growth apparently as much as either of the former two, but renders the leaves susceptible to severe scorching around the margins and the development of a flat green color throughout. It also causes early defoliation from the tips of the shoots on which marginal leaf scorch has been pronounced. This deficiency is apparently very widespread in England, and occurs occasionally in the field in Australia.

Although it is already known that other fruit trees behave in a manner similar to Apples, their reactions are not so well known, owing to less research having been performed in their cases.

Summary.

1. The lack of a definite manurial policy on the part of many growers is a cause of monetary loss to the industry.

2. The provision of ample humus by one of several means outlined is a pre-requisite of orchard soil fertility in Victoria.

3. The grower should base his manurial practice on the appearance of his trees, and not on the crops they bear.

4. Lack of each fertiliser gives rise to characteristic growth features.

5. Balanced manuring is essential, balance being more important than the actual amounts of fertilisers present. In this respect a good deal of approximation is still unavoidable.

6. Readily soluble types of fertiliser, such as sulphate of ammonia, superphosphate, and sulphate of potash, are preferred to more slowly available forms.

7. Autumn applications for the benefit of greenstuff may be either 1 to 2 cwt. of sulphate of ammonia or superphosphate, depending on conditions which are discussed.

8. Spring applications should be made two to three weeks prior to bud burst of deciduous trees; and for medium-sized trees should consist of 3 lb. per tree of either 2:2:1 mixture or sulphate of ammonia.

9. For citrus, 3 lb. of sulphate of ammonia in Spring, and again in Autumn, is good practice.

10. Owing to the danger of fertilisers being fixed by the soil before they can be absorbed they should be introduced, if possible, into the actual root zone by deep ploughing, or by irrigation or rain water.

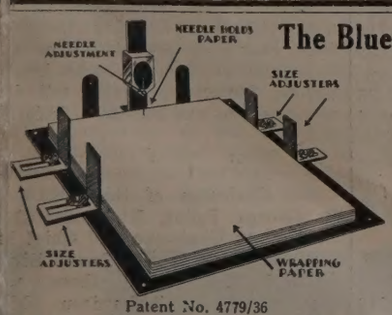
11. At best artificial fertilisers can be only a subsidiary measure to those items of sound soil management, which keep the soil in good physical condition.

GREEN MANURING FOR CITRUS GROVES.

Tickbeans are Recommended.

IT HAS PREVIOUSLY been reported, states the Council for Scientific and Industrial Research, in their recent annual report, that winter green manure crops such as **tickbeans** (Vicia faba) have led to an increase in both the size and yield of Orange trees. **Summer-growing green manure crops such as cowpeas, lucerne or Bokhara clover have proved unsatisfactory owing to the competition of the green crops for soil moisture during the summer months.**

The practical results of these experiments have been widely adopted on the irrigation settlements; and since the results of these investigations were first published, the practice of winter green manuring has increased at the rate of about 33 per



Patent No. 4779/36

Southern Victoria Pear Packing Co. Ltd.

Blackburn - - Victoria

Enquiries invited from Victorian and Interstate Packing Houses regarding District Agencies.

Has been tested and proved under working conditions

The Bluemoon "Fastpak" Paper Holder

— Fruit Wrapping —

REMARKABLE for the speed and smoothness with which the paper may be drawn from the container.

NO WASTE—the needle-point control ensures that there is no waste or unsightly torn corners.

ADJUSTABLE to take various sizes of paper.

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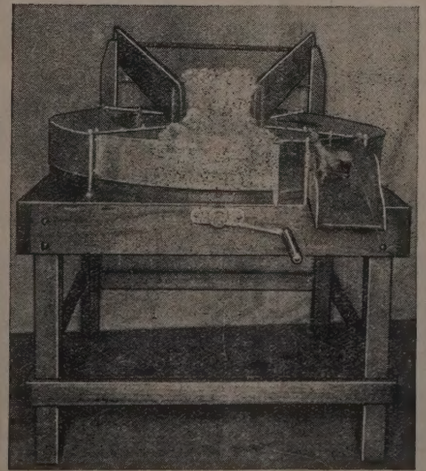
FAST to work with and definitely improves packers' tallies — at the same time prevents the paper from shifting or buckling in the container.



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The Only Efficient Dry Wiper on the Market

Models for both Apple and Pear Wiping.
Does not Bruise or Damage the Fruit.
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Full particulars from:

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To Interstate Markets

IN REFRIGERATOR or COOL, WELL VENTILATED 'TWEEN DECK specially adapted for Fruit Carriage and fitted with powerful Electric Fans.

FAST MODERN PASSENGER VESSELS

Sail every Wednesday and Saturday for Sydney and Brisbane.
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SPECIAL REDUCED RATES OF FREIGHT.

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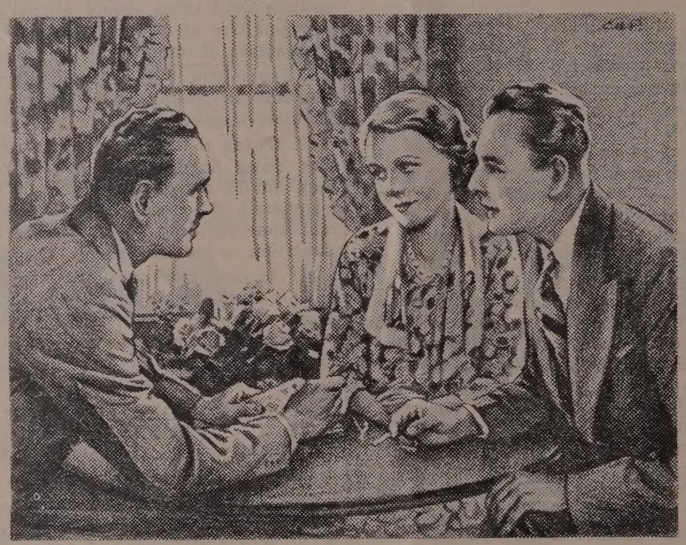

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OF course they can assure the baby. They can make his financial future secure. Absolutely secure, in any way they wish. They can make arrangements now for him to have the money to go to the University when he grows up, even though, by that time, they be dead and buried. It will call for extraordinarily little outlay on their part; so little as to be astonishing.

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The wise man will ask the nearest A.M.P. office to send him an experienced adviser to talk this matter over with him. Let him tell the adviser what he has in mind to do, and let him weigh the advice that the A.M.P. man will offer. Let him make the plunge into adequate A.M.P. assurance, at this beginning of a new year, and he will never regret it.

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cent. each year. Whereas formerly practically no green manures were used, it is now the accepted practice on well managed orchards.

In an extension of these investigations, trials of various winter grown legumes carried out for some years, indicate tickbeans as being most suitable.

Fundamental investigations are in progress to determine the causes for the effect of green manures in increasing plant growth under the conditions of the irrigation area.

Extensive studies of the soil nitrate content throughout the year revealed that nitrates are quite plentiful, even to considerable depths, both where the orchard soil is maintained in a state of clean cultivation and where green manures are used. In fact, more nitrates are present throughout the year in the clean cultivated plots than in the green manure plots.

In addition, investigations have revealed that heavy dressings of non-organic nitrogenous fertilizers fail to have the same effect as green manures.

Repeated green manuring has been found to alter the soil structure favorably, and has a slight though unimportant effect on the water holding capacity of the soil; but both these physical effects are ruled out as explaining the marked effect on plant growth noted.

Pot experiments, using ignited soil, show that wheat in the early seedling stage makes just as satisfactory growth where mineral salts are added as where green leguminous plants are added. Within the course of a few weeks, however, plants in the soil devoid of organic matter show signs of distress, whilst those manured with the leguminous refuse show healthy growth and rapidly overtake them. This line of investigation is being followed up.

ACREAGE UNDER FRUIT.

A Statistical Review.

More Fruit From Less Acres.

The Government Statist in his latest returns, points out that the number of growers increased from 6,685 in 1934-35 to 6,712 in 1935-36. but the land cultivated decreased from 74,763 acres to 74,006 acres.

More Apples, Pears, Quinces, Apricots, and Cherries were grown in 1935-36, but the quantity of Nectarines, Peaches, Plums, Prunes, Lemons, Oranges, Figs, and Passionfruit decreased. Apples rose from 2,085,081 bushels to 2,417,425. Pears rose from 1,021,780 bushels to 1.492.-062, while Peaches fell from 1,173,031 bushels to 915.811; Lemons fell from 220,737 bushels to 205,089, and Oranges fell from 639,325 bushels to 618,290.

The total quantity of large fruit gathered increased from 5,795,714 bushels in 1934-35 to 6,360,859 bushels in 1935-36. The total quantity of berry fruit grown in 1934-35 was 19.336 cwt. in 1934-35, compared with 14,667 cwt. in 1935-36. With dried tree-fruits some show increases others decreases. The biggest increase is in Prunes as the following table shows.

	1934-35. lb.	1935-36. lb.
Apples	3,301	5,219
Apricots	116,007	113,600
Figs	6,239	7,281
Nectarines	379	384
Peaches	165,363	73,780
Pears	22,773	51,652
Prunes	571,715	851,192
Total	885,777	1,103,108

Council for Scientific and Industrial Research.

Valuable Work Accomplished.

A COMPREHENSIVE REVIEW of the activities of the C.S.I.R. is given in the 10th annual report of the Council, which is just to hand from the Government Printer. The breadth of the investigations will be observed from the following summary:—

1. Plant Investigations.—Plant introduction, pasture plant improvement, fruit, wheat and tobacco investigations, Virus Diseases of Potatoes, Pea disease, needle-fusion of Pines, Fungal discoloration of paint, herbarium, Maize breeding.

2. Entomological Investigations.—Noxious weeds research, the sheep blowfly pest, the buffalo fly pest, blood parasites of cattle, orchard and fruit pests, field crop and pasture pests, Termite (White Ant) research, pineapple chermes, oak scale, greenhouse whitefly, bee research, mount ants, silver fish, garden snails, systematic and general entomology, natural enemies sent overseas, advisory work.

3. Noxious Weeds Investigation.—Entomological control, chemical and other forms of control.

4. Animal Health and Nutrition Investigations.—Research station at Townsville, Queensland, zebu importations, the McMaster Animal Health Laboratory, Animal Health Research Institute, Melbourne, Investigations in South Australia, Western Australia and Tasmania, the Animal Nutrition Laboratory, Adelaide.

5. Soil Investigations.—Soil survey and chemical investigations of soils, bacteriological investigations.

6. Irrigation Settlement Investigations.— (a) Viticultural Research Station (Murray Irrigation Areas) Merbein, Victoria: Results of economic interest, irrigation and viticultural problems, fruit processing, pasture plots, co-operation with State Departments and Primary Producers' Organisations, financial assistance.

(b) Citricultural Research Station (Murrumbidgee Irrigation Areas) Griffith, New South Wales: Green manuring, fertiliser experiments, alternate cropping of Valencia Oranges, cold storage of citrus fruit, frost, permanent pastures, irrigation investigations.

7. Forest Products Investigations.—Wood structure, utilisation, timber seasoning, physics and mechanics of wood chemistry and preservation.

8. Food Preservation Investigations.—Chilled beef investigations, citrus preservation investigations, notes on tropical fruit investigations, Banana investigations, liaison work in England.

9. Other Investigations.—Commonwealth Prickly Pear Board, Rabbit Research Board, Mineragraphic investigations, ore-dressing investigations, Standards Association of Australia, fuel problems, fisheries investigations, biometrical work, soil drift investigations and Bureau of Information.

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The Chairman of the C.S.I.R. is Sir George Julius, Kt., B.Sc., B.E., the Deputy Chairman and Chief Executive Officer is Sir David Rivett, K.C.M.G., M.A., D.Sc.; these, with Prof. A. E. V. Richardson, M.A., D.Sc., constitute the Executive.

SHOWS TO COME.

Portland—February 18 and 19.
Sydney Royal Show—March 22-3
Somerville, Vic.—March 24.
Diamond Creek, Vic.—March 27

Victorian News and Notes

CROYDON – VERMONT – TUNSTALL – MITCHAM AND RINGWOOD (Vic.)

Well Kept Orchards and Poultry Farms in These Fertile and Charming Localities.

(By Our Travelling Representative.)

CROYDON (Vic.) is situated at the foot of the Dandenong Ranges, about 18 miles from Melbourne, due east, and is quite a self-contained town, being a fine place for holidays for the people of the north or seaside folk. All the trains from Lilydale, Warburton and Healesville pass through, consequently about 40 trains on week days, and half that number on Sundays, serve this place. The district is noted for its scenery, fruit and flower gardens, poultry and dairy farms, and its health-giving climate. The valleys are splendid for vegetable and berry culture, for the district is blessed with ample rain—droughts being unknown.

Apples are the chief fruit grown, but there are plantings of Pears, Cherries and other kinds. The Jonathan predominates here, but is quite different in appearance to that variety grown up north, or on the Mornington Peninsula.

White Horse-road, Croydon, can boast of its orchards. Here is **Mr. C. Lipscombe's** huge garden, planted with the useful sorts, with private cool store (right on the road). This is the first to catch the eye, on approaching from Croydon town via Kent-avenue. Next door W. is **Mr. E. Thomson's** 12 acres of Jonathan Apples, also Packhams, and Nelis Pears. Nearly enough manure is obtained from his poultry for this place, but some B. & B. is also used.

Mr. W. R. Pye has 14 acres of Cherries, Apples and Peaches, the Statesman Apple trees are showing particularly heavy crops, which are being thinned. Heavy manuring, perfect cultivation, and careful spraying is in evidence. Mrs. Pye is also an enthusiastic orchardist. Mr. Holder's, alongside, is leased to the Pye's.

Mr. Marcus Gill, also on White Horse-road, cultivates 35 acres of Apples, Pears, Cherries and Peaches. The "Gill's Favorite" Peach, which ripens in mid-season, is grown to perfection, and is highly esteemed. Heavy cover crops are regularly turned under in conjunction with manuring. The pruning has been scientifically done, and with the intense cultivation and systematic spraying, the trees are showing fine growth and a clean crop. In this area I noticed a large neglected orchard; this necessitates extra spraying by near-by orchardists to cope with the pests.

Mr. D. H. Sleeth, with 20 acres, is next to Gill's. Apples and Pears are specialised in, and this year 2:2:1 manure has been liberally used. Mr. Sleeth believes in a rotation of manures. He gained his experience at some of the large orchards of Blackburn.

Mr. Duffell adjoins Sleeth's, with a similar area, unfortunately he was not about when the writer called. The whole place is eloquent of good management.

The properties on the lower side of White Horse-road utilise all the water drained from that highway, into enormous dams, which overlook the orchards.

Mr. S. Smith, on the Croydon side of White Horse-road, who is ably assisted by his wife and son (these are a body of enthusiasts), possesses a very fine 20-acre property, comprised of 4 acres Lemons and 16 Apples; Jonathans taking pride of place; these are interplanted with Stewarts and Democrats, not a weed is to be seen. Mr. Smith is scooping away all his headlands and placing this soil amongst the Lemons; this will also provide draining facilities. The trees are showing profuse growth, with fruit above the average size.

Croydon Cool Store Trust, of 20,000 case space, is now run by electric power, and has recently been converted into the direct expansion system.

Mr. C. Camm, the engineer in charge, is well pleased with the condition of the fruit kept under his charge, under the new system. He is a member of the Institute of Cool Stores Refrigerating Engineers.

This store will open on February 3 for the pre-cooling of Pears for export.

Space is allotted to growers on the pro rata basis of acreage, the charge being 1/6 per case space.

The directors are Arthur Upton (Chairman), A. C. Chandler, H. R. Chandler, H. W. Smith, W. Gill, W. Lipscombe. The secretary is R. Langley.

Near the cool store on the railway line is the Croydon Supply Co. (Lacey & Son), which caters for orchardists and poultry keepers in all their requirements.

For the I.F.M., adjoining the cool store, Mr. Phillips, superintends a packing house, having installed a "Lightning Grader" and a "Perfection Fruit Wiper." These machines greatly facilitate the work. A demonstration of the "Perfection" Pear wiping machine was given at the Croydon Cool Stores recently, when growers from Doncaster, Blackburn, and other districts were present. Pears of all sizes were placed in the machine, irrespective of variety, and on emerging were found quite free of spray residue and not the least damaged. The running costs and upkeep are very low; approximately 25 cases cost ¼ of a penny. Two lads can feed a four-channel machine delivering 60 cases per hour, without breaking a stem.

The growers present showed their faith in the results by placing several orders for immediate delivery.

Mr. Phillips, assisted by his head mechanic, Mr. W. Glynn, is now "perfecting" a citrus cleaning machine, which he is confident will meet the demands of growers, at a cost to suit all pockets. The Perfection Apple Wiper was also on view.

A special feature of the Pear machine is that it can be converted in a few minutes into an Apple Wiper, or a portion can be kept for Pears and the other half for Apples.

Vermont.

About two miles south from Mitcham Railway Station is a very beautiful locality, and passing along Mitcham-road some gorgeous gardens are seen, with splendid residences.

The rural population are engaged in fruit, flower and vegetable growing, as well as dairying and poultry farming, and as Melbourne can be reached via Canterbury-road per motor, within half an hour, good prices are realised for their produce.

Mr. C. R. Livermore has a particularly well-kept orchard on Railway-road, showing splendid healthy growth and clean fruit. This garden has been well sprayed, even the Delicious Apples (which are very susceptible to Black Spot) appear perfectly clean. Unfortunately the owner was not at home, but his assistant informed the writer that a few ozs. of bluestone was always used, in conjunction with arsenical spray, for early application on those varieties most susceptible to Black Spot. On the other side of the road is **Mr. V. Rhodes'**; here again is evidence of the competent orchardist. This property of twenty acres (Apples and Peaches) is an example of what industry and intelligence can do.

Mr. Rhodes was picking and packing "Anzac" Peaches of quality. He attributes his success to heavy manuring and cultivation at the right time.

At the bend of Railway-road, west from Mr. Rhodes' orchard, is a poultry farm, the owner being **Mr. Geo. Mills;** these few acres were purchased from Mr. H. A. Farrance, who has another property further east.

This enterprising poultry farmer is most enthusiastic about his venture, having 800 White Leghorns of quality. All pens cemented, and everything natty, clean, and useful. His ambition is to shed 2,000 layers.

There are quite a number of poultry farms in this locality, but before passing, mention must be made of H. T. Scoble, late of the A.I.F., who has a few acres here, the whole of which he has under vegetables, flowers and greenstuff, with his birds, about 500, well shedded. He keeps Australorps, White Leghorns, Minorcas, and Rhode Island Reds. These last show fine laying characteristics, as well as being typical of the breed. This line won winter test at Burnley.

Usually he carries more birds, but prefers to understock. He states overstocking is one of the chief sources of failure.

All the manure is used on the place and the plants certainly show to advantage.

In Mr. W. A. Thiele's Lemon grove, Doncaster (Vic.). Left to right—Mr. S. Brown (Pakenham), Mr. W. A. Thiele and Mr. C. W. McRostie (S. Aust. Fruit Growers' and Market Gardeners' Association).

TUNSTALL, MITCHAM AND RINGWOOD.

A few years ago, White Horse-road (the main eastern artery) was noted for its adjacent orchards, right from Kew East: this is now changed to residential suburban, being served with trams and motor buses.

About the first commercial orchard is **Oliver's,** near Tunstall, then **H. Lee,** at Mitcham, near the station, and **F. A. Bloom's** a little further on.

Mr. Bloom is to be congratulated for his enterprise here. The residence is built of cement blocks and tile roof with spacious verandahs and equipped with all modern conveniences inside and out. The property is easily recognisable on the right, after passing Mitcham, the house being surrounded by a gorgeous flower garden and probably one of the finest plantations of Lemons to be seen in eastern Victoria.

At present a fine crop is showing of this fruit, although many cases have been recently marketed; across the railway line is the Apple plantation of Jonathan, Granny Smith and Yates. Mr. Bloom advocates heavy manuring and cover crops, thinning the fruit, systematic spraying, cultivation at the right time, and scientific pruning. The garage, packing house, stables, tool house and sheds are all in keeping with the homestead.

Across the road is one of the patriarchs of fruit growing in Victoria, Mr. W. Cook, who has been in the district over 70 years.

This hardy pioneer used to stand in Bourke-street with his cart load of fruit, and had for neighbors the late Tom Petty, and late Ed. Lawford.

These three vied with each other in supplying best fruit. Probably they were the first to realise the value of grading, so as to present the fruit in best appearance.

Mr. Cook's orchard of mixed fruits is now leased to Frank Petty, of Donvale.

In those days there was no Victoria or Wholesale Markets, the Old Eastern, or Paddy's Market was the vegetable market. The fruit grower vendor had to stand out in the weather. What about the "good old days?"

Until Ringwood is passed there are no more orchards of size on White-horse-road, but from there on many fine plantations are to be admired.

The Ringwood Co-op. Cool Store of 52,000 case capacity is right at the railway station.

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You Can't Get Good Prices *for* Bruised Fruit

PROTECT YOUR FRUIT WITH

ANTI-BRUZE CORRUGATED FRUIT PADS

MADE IN TASMANIA.

Obtainable from Leading Distributors throughout Tasmania.

In the following Sizes and Quantities:—

DUMP CASES—		
SIDES (Plain or Vented)	17 x 13	500's
TOPS AND BOTTOMS	17 x 8	1,000's
CANADIAN CASES—		
SIDES	17 x 10	1,000's
TOPS AND BOTTOMS	17 x 11	1,000's
PEARS—		
SIDES	13 x 6	1,000's
TOPS AND BOTTOMS	13 x 12	500's

Also Combination Packs of:—

DUMPS	CANADIAN	PEARS
(500 17 x 13)	(500 17 x 10)	(334 13 x 6)
(500 17 x 8)	(500 17 x 11)	(334 13 x 12)

Lightning Home Builder

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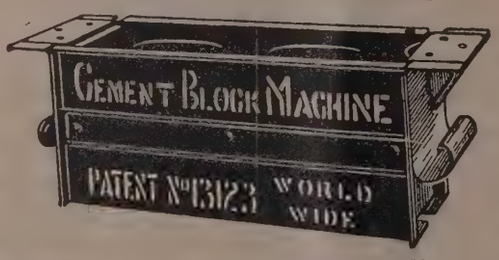
FOR ALL BUILDING REQUIREMENTS

WHY not build your own Home, Drying Shed, Packing Shed, Garage, Dairy, Outbuildings, etc., in your spare time with blocks made with our machine? MUCH CHEAPER THAN BRICK OR WOOD. Fire and White Ant Proof and Everlasting.



Our 18in. (length) x 6in. (width) x 8in. (depth) STANDARD MACHINE (Incomplete)

Our Standard Block-Making Machine (illustrated) is supplied complete with all fittings to make 18 different styles of building blocks.

Price . . . £6/10/- Nett

The same machine can be supplied with fittings to make 9 different styles of building blocks.

Price . . . £3/15/- Nett

Full operating instructions, etc., supplied with machines. We manufacture machines for producing all classes of Building Blocks, Silo and Tank Blocks, Fence Posts, Channelling, Gutter Bricks, Kerb and Gutters, etc., etc.

Write us for Price List and full particulars, and we will be pleased to forward evidence of efficiency.

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This store is partly "direct" and partly "cold air" and it has not yet been decided whether to convert the balance of "cold air" to "direct expansion."

Mr. A. J. Tann, the chief engineer in charge states that everything has been running smoothly and satisfactorily at the Ringwood Cool Store.

One suction gas and one crude oil (Hornsby) engine are installed.

The directors are Messrs. H. H. Pump (chairman), H. F. Pearson, J. W. Barrett, and J. M. White; Mr. W. McKinley recently died and another director has to be elected in his place. The secretary is Mr. J. G. Aird.

The store is to be opened for precooling about the end of January. The present price per case space is 1/6 per annum. In the course of a few years the shareholders (if prices and crops are good) will have paid for the store.

VICTORIAN FRUIT CROPS.

Good Crops of Apples, Pears, Peaches, Citrus and Grapes.

IN a recent review of Victorian fruit crop prospects for 1937, the Department of Agriculture stated that leading varieties of **Apples** and **Pears** generally are showing better than other sorts. A feature of the approaching harvest is the heavy crop of Granny Smith Apples.

There should be a good crop of dessert **Peaches** in southern districts and reasonably good yields of canning and other kinds in the Goulburn Valley.

At Mildura all varieties of **citrus fruit** seem to have set well. Valencias will not be as heavy in the Swan Hill areas, however, where blossoming has been spasmodic. Lemons, Grapefruit and Mandarins have blossomed well.

At Swan Hill and Mildura, with the exception of a few isolated vineyards, vine crops promise to be equal to that of last year.

NARRE WARREN.

Mr. Ray Bailey reports that the following varieties of Apples have set fair crops: — Jonathans, Granny Smith, Yates, Rome Beauty.

Rome Beauties are expected to be light.

Portland Show: Under the auspices of the Portland District Pastoral, Agricultural and Horticultural Society the thirtieth annual show will be held in Henty Park, Portland, on February 18, and 19, 1937. General entries close on Wednesday, February 10, 1937.

His Excellency, the State Governor, Lord Huntingfield, will open the show.

Open Case Fruit.

Useful Freight Reduction.

The Victorian Railways Commissioners have announced that from now onwards open case (or unlidded) fruit will not be charged the 25 per cent. additional, as in past seasons from country railway stations. This reduction is of value to fruitgrowers who send fruit in open cases to market and to jam factories.

Harcourt Cool Stores.

The annual meeting of shareholders of the Harcourt Co-op. Cool Stores Ltd., was held on January 27, Mr. J. H. Young presiding. The directors report stated that 54,647 cases of Pears had been pre-cooled, in addition to the storage of Apples, which, with replacements made a total of 200,000 cases handled for the 1936 season. The fruit on the whole kept in excellent condition and there was a good demand at remunerative prices. The working account for the year showed a nett profit of £584.

TRAPPING HAWKS AND USING THEM AS BIRD SCARERS.

ORCHARDISTS AND OTHERS who keep poultry on free range, are often pestered by hawks, especially in the Summertime, when there are a lot of chicks about.

Even if they do not kill anything, the hens and chicks are scared to death, and take shelter for hours, wherever possible; therefore something must be done to stop this nuisance.

Observation has taught the writer that a hawk will always settle on the highest post about the place (probably just out of gun range) from which he surveys his hunting ground.

A good plan is to procure some 3 x 2 timber about 20 feet long or less and nail a board about 12 x 4 in. on one end, then drive three nails into this board, in right position to hold a rabbit trap; then up-end the pole, and tie to fowl house near the door, or a fence post nearby, and the trap, in position, is set.

Several of these will capture all the hawks that come around, but do not fix the trap too securely, just sufficient to keep in place while up-ending, and the hawk will be found on ground with trap on toe or leg, and can be released or killed as required.

But the hawk is a very useful birdscarer for the gardener, and to make special use of him in this capacity that is (if not badly injured), place him in a large open netting pen, amongst the trees, or tether with cockatoo chain on leg, to elevated perch, or wire, drawn between two high posts. The bird can be fed and watered, but only lightly, so as to cause restlessness. When all this is done, behold the "Perfect Bird Scarer."

The writer has captured scores of hawks in this way, and has scared starlings away from all kinds of fruit.

When the fruit season is over, the hawks can be taken to the taxidermist or ladies' hatter, for the feathers are wonderfully marked, and will more than repay for any trouble taken.

Quite a number of people at Quantong and Tyabb have seen this scheme in operation, and have wondered how I managed to climb the pole to set the trap.—E.L.

HARCOURT.

At the recent annual meeting of the Harcourt Fruitgrowers' Progress Association, the annual report and financial statement were adopted. Sales amounting to £8,889 were made, a gross profit of £832 being made. After allowing for administration and other charges the nett profit was £354. 26,000 cases of fruit were packed for export; fruit was purchased for the amount of £4,826, and the sales totalled £6,321.

Election of Directors. — Directors were elected as follows:—Mr. G. Douglas, Chairman, and Messrs. K. V. Eagle, R. Hankinson, and H. M. McLean.

A hearty vote of thanks was conveyed to the directors, and a vote of appreciation was also conveyed to Mr. V. Wilkinson and Miss K. Martin for services rendered.

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VICTORIA—(Continued).

Field Day at Doncaster.

Spraying Pear Trees to Control Black Spot and Russet.

A SUCCESSFUL FIELD DAY was held at the orchard of Mr. W. A. Thiele, Doncaster, on January 28, under the auspices of the Southern Fruitgrowers' Association, the Victorian Fruit Marketing Association, and the Southern Pear Packing Co. About 200 growers attended from Doncaster, Vermont, Ringwood, Mitcham, Pakenham, Narre Warren, Drouin and other centres.

The President of the Southern Fruitgrowers' Association, Mr. F. G. Beet, in some well-chosen words, introduced to the audience the Government Biologist, Mr. S. Fish, M.Agr.Sc., congratulating him and his staff on the success of their investigations over the past five years.

Mr. Fish gave details of the experiments which can be summarised as follows:—

The results of the work up to date have shown that consistent control of black spot can be obtained by the application of Bordeaux mixture 6:4:40, applied just as the young folded leaves are protruding from the buds, and again as the leaves separate from the unopened blossom buds. This is followed by Bordeaux 3:3:50, applied three weeks after the fruit is formed, and incorporated with the arsenate of lead spray.

This schedule will give consistent control of black spot, but it produces russet. With the view of improving the schedule from the point of view of russet it was evident from the experiments to date that dilute copper sprays would reduce russet very considerably, but that as the conditions this season were unfavorable for the development of black spot, the value of the diluted copper syrays, from the point of view of spot control, has yet to be determined.

A cordial vote of thanks was accorded to the Department of Agriculture and Mr. Fish on the motion of Messrs. J. J. Tully and R. E. Boardman.

Mr. F. Moore proposed a hearty vote of thanks to Mr. W. A. Thiele for making his orchard available for the recent experiments. Mr. F. Pyke seconded. The resolution was carried with applause, and Mr. Thiele duly responded.

Demonstrations were given of the Fordson tractor, coupled to Harvey orchard implements, and there were also on view Commer and Morris trucks, the Perfection fruit wiper, and Harvey citrus washing machine.

In Mr. Thiele's packing shed growers saw a working demonstration of the Harvey Pear washing and grading machinery.

Packham's Triumph Pear

Stem End Shrivel Usually Controlled by Late Picking.

AS A REGULAR cropping variety, of attractive appearance and excellent quality, the Packham's Triumph Pear is deservedly popular: it keeps well in cold storage and is a good export variety. The N.S.W. Dept. of Agriculture points out, however, one defect—if it is held in cold storage for some time the tapering end shrivels, thus reducing, to a greater or less extent, its market value. It is, in fact, far more susceptible to stem-end shrivel than any other Pear produced in N.S.W.

Experiments carried out over a period of five years (1930-34) at Batlow Cool Store showed that the condition is influenced mainly by the stage of development at which it is picked. The following conclusions were drawn from the results of the experiments:—

1. The best stage at which to pick Packham's for cool storage is when the skin shows a decided yellowish tinge and the fruit gives a pressure test of 12 or thereabouts.

2. The picking stage would appear to be the main influencing factor so far as stem-end shrivel is concerned.

3. Enclosing the fruit in oiled wraps appears to have little or no control over the shrivelling, and any slight advantage gained by so wrapping is more than offset by the additional cost and labor involved.

4. The breaking of the stalks does not appear to play any great part in the shrivelling of the stem end.

5. Soil condition, although having a direct bearing on the quality of the fruit, appears to exercise little influence on its susceptibility to stem-end shrivel.

6. Quite apart from the shrivelling, the fruit keeps in much better condition generally when picked at the stage indicated than when picked merely because it has reached a saleable size.

7. The flavor of the late picked fruit was superior to the early picked fruit.

8. The loss of weight during the storage period of the early picked fruit was much greater than the loss of weight in the later picked fruit.

It must be borne in mind that all varieties of Pears grown in N.S.W. will shrivel when picked on the immature side and held for some weeks in storage. The degree of shrivelling varies considerably with the variety, Packham's being the most susceptible.

CONSUL-GENERAL AS MUSHROOM CANNER.

With Spain so much in the news these days, it is interesting to note a paragraph which appeared in the "Herald" (Melbourne), on 18/1/37 in which it was reported that a mushroom-canning company was proposed by a Spaniard, Mr. R. Mas, of Sydney, and that the present Consul-General for Spain in Australia, Senor Pedro de Ygual, will be associated in the enterprise.

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Portion of the audience of 200 growers listening to the address of Mr. S. Fish, Government Biologist, at the Doncaster Field Day on January 28th.

Seasonable Orchard Notes

PEST AND DISEASE CONTROL — HANDLING AND PACKING FRUIT FOR EXPORT — NEED FOR GOOD LIGHTING IN PACKING HOUSES.

Hints from New Zealand.

AN APPRECIABLE RAINFALL during the month of February or prolonged occurrence of humid conditions increases the danger of a late infection of black-spot, and when these are experienced an application of the usual combination-spray should be made later in the season than is otherwise necessary. This spray applied in early March often prevents serious losses on late varieties such as **Dougherty** and **Sturmer.**

Where summer oil has not yet been applied for the control of red mite, two applications at a dilution of from 1 per cent. to 2 per cent. should be made as soon as possible. An interval of ten days between the applications is desirable. About fourteen days should be allowed to elapse before applying summer oil following a sulphur spray.

At this season late varieties of stone fruit require spraying, particularly for the control of brown-rot. The frequent gathering and destruction of all diseased fruits, both on the trees and on the ground, will assist very appreciably in the control of this disease.

Handling Fruit for Export.

If the best results are to be obtained, the utmost care and skill is necessary in every operation in which the handling of fruit is involved. Although speed is essential it should not be striven after to the extent that the ultimate out-turn of the fruit will be deleteriously affected. In the packing-shed there should be as much space as possible provided for every operator. Congestion frequently necessitates double-handling of the fruit, which increases costs.

Good lighting is also essential for good work, particularly for the graders and packers.

Sky-lights are far more satisfactory than any number of side windows, as the latter almost invariably produce shadows which conceal some portion of the fruit that otherwise would be visible to the operator. It is suggested that fully 50 per cent. of the below-standard fruit that is inadvertently included in cases of fruit prepared for export is due to inadequate lighting.

Machine graders will require frequent cleaning to remove accumulations of oily matter which forms into hard lumps, liable to bruise the fruit. The frequent cleaning-out of the bins is important, as also is general care of all moving parts, to ensure good running order.

The over-filling of bins is frequently the cause of stem-punctures and bruising.

As the case is being packed it is important that the packer should apply pressure with the hands at the ends of the case. This practice is necessary to keep the ends low and at the same time permit of a good bulge in the centre of the case.

The turning of the fruit in the right direction on the top tier should also be insisted upon.

It is a good practice for the person attending to the nailing-down to be in some way held responsible for any damage resulting from that operation. This will, in a large measure, prevent the nailing-down of cases that have not been well packed. Cases packed with the fruit too high at the ends should be specially guarded against as this fault in packing is largely responsible for fruit arriving at its destination in a bruised condition. A badly driven nail often results in trouble; if projecting inwards a fruit may be punctured; if outwards possibly an injured hand or a dropped case. Especially in loosely packed cases, care is necessary in operating the lidding press to see that the fruit along the sides and ends are not cut on the edges of the case.

The outward appearance of the cases should be given due attention by using only a good quality paste and the stamping of necessary particulars, such as the variety, in a clear and neat manner. The good reputation New Zealand fruit has gained on overseas markets can be maintained only by strict attention to every detail in connection with the marketing of the fruit.

Tree Supports.

At this time of the year the matter of providing necessary supports for fruiting limbs should receive immediate and constant attention.

Neglect of this important work frequently results in the loss of valuable fruiting wood which will take a number of years to replace. Trees supported by a permanent system of wire bracing will at times require further attention by shifting the supports either higher or lower on the limbs, according to requirements, also further limbs may need including in the system. Props frequently require adjustments, especially following a windy period. — P. Everett, Orchard Instructor, Gisborne, N.Z., in "N.Z. Jour. Agric."

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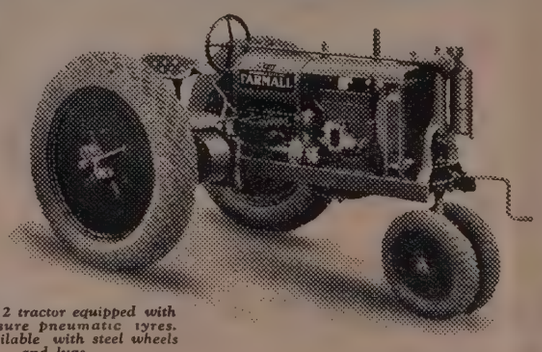

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STRAWBERRY CULTURE.

Hints from Queensland.

EARLY PREPARATION of the land for Strawberry planting is desirable. In a recent article, Mr. H. Barnes, Director of Fruit Culture in Queensland, writes as follows:—

Soil for Strawberries.

Given suitable climatic conditions, Strawberries will thrive in most soils, but the ideal soil for this fruit is a rich loam of medium texture, well supplied with humus, possessing perfect natural drainage, and capable of retaining moisture during dry spells—and the nearer one can get the soil to this ideal the better the results. Heavy, cold, badly-drained soils are not suitable, but any good loam or sandy loam, whether of scrub or forest origin, can be made to produce good berries if properly treated.

Preparation of the Soil.

There is only one way to prepare soil for Strawberry culture, and that is—thoroughly. Nothing else will do. In the case of virgin scrub or forest land, which is, as a rule, fairly rich in humus, the land, after it is cleared should be broken up deeply and brought into a state of as nearly perfect tilth as possible.

On virgin soil, except it is of the poorest nature, it is not necessary to apply any manure for the first crop, as there is usually an ample supply of available plant food and humus present in such soil, but for subsequent crops or old land, systematic manuring is very important.

Old land that is at all deficient in humus should have that deficiency made good, either by the application of a heavy dressing of farmyard or stable manure, such as a load to every 4 perches, or if this cannot be obtained, then by

Growing a Green Crop

such as Cowpea or other legume which has been well manured with phosphatic and potassic manures and ploughing it in. The green crop so ploughed in should be allowed to rot, and, when rotted, the land should be reploughed and worked down fine.

If the green crop has received a generous dressing of phosphatic and potassic manure, then there will be no need to apply any further fertilising material to the land, as a complete manuring has been given; but if not, then the soil should be treated as recommended later on.

The surface of the land should be kept as even and level as possible, and, as already stated, it should be worked down fine, so that when the young plants are set out they will take hold of the soil at once and become firmly established.

Planting Strawberries on raw land, sour land, or land that has been indifferently prepared is only courting failure, whereas, when the planting is carried out as advised, there is every chance of success.

Selection of Plants.

Always obtain strong runners from healthy, prolific plants. The first runners next to the parent plants are to be preferred, as they are usually the most vigorous and best rooted, and, further, they come into bearing earlier; but, failing these, well-rooted, strong, well-grown runners from nearer the tips can be used, and although they will not fruit as soon as the first runners they will give a good yield later on, and frequently continue to bear when the earlier fruiting plants have ceased.

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Cold Storage In Australasia

Refrigeration Systems . . .

Direct Expansion Versus Air-Circulation

By F. H. Williams, M.A.C.E., Dip. Refrigeration.

A Paper Read at the 75th Quarterly Meeting of the Orchardists' and Fruit Cool Stores Association of Victoria.

IN THE FIRST PLACE I want to explain and examine both the direct expansion system of refrigeration and the indirect or air circulation systems so that you may become familiar with them and thus you will be able to estimate for yourselves the advantage of one system over the other.

Air Circulating System.

In the first place we will take the air circulating system, which is the most common method used in fruit cool stores, and which is being displaced by the direct system.

With the air circulation all the cooling is done in the battery or bunker room, the air being circulated by means of a double acting fan, which draws the hot air from the chambers and forces it between the ammonia coils on to the chambers again. Thus the cool air takes up the heat from the fruit which is cooled in the battery, and then passed on to the chambers again.

The hot air contains moisture which freezes on the ammonia coils, and thus we have to use chloride of calcium brine to keep the coils clean, so that the density of this brine determines and controls the humidity in the chambers.

The constant air circulation has a tendency to dry out the fruit, and cause wilt, and even if we had no brine to contend with, I believe we would have the same drying out of the fruit which causes wilt. As an instance, if you hang a wet bag in the wind, how long will it take to dry?; but hold a wet handkerchief in the wind and it will soon dry. Although the air circulation in the cool chambers is not of the same velocity as the wind, yet you can see the same thing takes place, only it takes longer to do the work.

Thus we do not see much difference in the two systems up to the end of August or September, but after that time the fruit becomes wilted and dry, losing much of its flavour which, in my opinion, lowers the consumption of fruit.

The Direct System.

In the direct system, by which is meant the expansion of ammonia directly in the evaporator coils in the refrigerator rooms, the transmission of heat from the air and from the fruit to the ammonia piping causes moisture to be collected on the coils. and this moisture is retained in the cool chamber. This system, being direct, is very simple and easy to work.

What the fruit grower wants to-day is results at the lowest possible cost. and I find, in working the two systems, that I have to run 3 hours longer on the air chambers than on the direct expansion chambers, also that I have to bring the air chamber down 2 per cent. lower than the expansion chamber, because when I stop the fan I find in the 3 hours that the temperature has risen 2 per cent., whereas the direct expansion room has remained constant; so for economy you can see that the expansion rooms can save you at least 3 hours per day as compared with the air circulation system.

Saving in Power.

With the direct system there is also a saving in power. First of all there is the complete saving of the electric or other power to run the pump, shafting and fan. In the majority of battery stores, the power for pump, shafting and fan amounts to 20 per cent. of the total power installed, and if this is removed, of course, an obvious saving of 20 per cent. is made in working costs.

Half of the horsepower put in the fan and pump is dispersed in friction, in warming the brine, and in warming the air, and in some stores this amounts to an average of 10 h.p., which is equivalent to nearly 3 tons of refrigeration fighting against the main compressor.

Remove the fan and pump and the load on the compressor is usually lightened by at least 10 per cent.

Direct expansion stores will run 25 per cent. less unit cost, and the refrigerator will cool more fruit per ton of refrigeration.

Saving in Chloride of Calcium.

This is an everlasting expense, and runs into about £10 per year, according to the size of the store.

Saving in Fuel.—As I have already stated I have to run longer on the air system to maintain the same temperature and this saving would vary according to the size of the plant and fuel used.

Maintenance.—With the battery system maintenance is heavy on fans, fan shafting, pumps, piping and concentrating equipment belting, and it would be safe to say that on these items alone an average of £10 per year could be saved in the average battery store. and if the fan shaft should break, which it often does, usually in the busy season, the whole of the cooling system is stopped, and often causes a delay.

Up-Keep of Building. — The ill-effects of brine, condensation, and so forth, from the battery, is well known to most of you, and a leaky battery tank may do a tremendous amount of damage before it is discovered. Costly repairs to air ducts, etc., have also been necessary, and none of these faults are seen in the direct expansion system.

Placing the Coils.

The position of the coils in the chambers is very important. I have the three systems; the coils on the ceiling without drip trays, coils on the ceiling with drip trays, and the coils on the walls.

Ceiling.—I find the coils on the ceiling without drip trays to be the best, as the moisture on the fruit does not hurt it, but you could not call it a utility chamber; for instance, you could not pack fruit for export and put it in this chamber, as the cases would get wet and discolored. Also it is no good for soft fruit, as this fruit does not like too much moisture, but for Apples and Pears in kero cases I like it. With the drip-tray underneath the coils you can store all kinds of fruit.

Walls.—With this system the fruit must be stacked 6 in. from the coils, also 18 in. space between the rows to allow for air circulation. This loses a lot of space which is very valuable to the fruitgrower, but with the coils on the ceiling you can stack as tightly as you like, as the hot air will rise, and that is where you have the ammonia coils to take up the heat.

By changing over to this method you gain more storage space, thus the extra storage space and the saving in working costs will soon pay for the outlay.

Temperature in the Direct Expansion Chamber.

I can keep a much more even temperature in the direct than in the air circulation and battery system for the air must come into the chambers cooler than it goes out, otherwise it would not do its work. In the battery system, while the fan is in motion, you get a false reading of the temperature, because when the fan is stopped in 3 hours you will find that the temperature has risen, while with the direct system it remains constant much longer and there is not the same variation in temperature.

Ventilation.—With the direct system I would advise you to have ventilating doors placed in the floor of the chamber to allow the gas to escape and to allow fresh air in and keep the chamber clear of CO_2.

A number of cool stores have changed from the battery system to the direct, and are well satisfied.

Speaking to a meeting of growers, I would say that I believe that if you put your fruit on the market in good condition, crisp and full of flavor, you will create an appetite for it, and I firmly believe that the direct expansion system will do this better than will the air-circulation system.

In conclusion let me issue a warning—if you call tenders for a change over it is not always wise to accept the lowest tender, as some consulting engineers will quote upon cheap piping in order to get the job, and will cut here and there to make more profit. Remember that you are building a cool store, not for a year or two, but for a lifetime, and the few pounds extra in the building that you may save may become a great expense, in the years to come, and even at first not give the results which you expect.

FIRE AT VICTORIA DOCK COOL STORES.

Loss Estimated at £500,000.

Damage estimated at £500,000 was the result of a fire which almost completely destroyed the main section of the Government Cool Stores at Victoria Dock, Melbourne, on Monday afternoon, January 18. It is believed to have been caused by the fusing of an electric wire.

The property destroyed included butter, cheese, bacon, rabbits, machinery and equipment, together with the building. The equipment which was destroyed had recently been reconditioned ready for the export season.

The store was one of the largest in the Southern Hemisphere, covering an area of five acres.

The fruit cool storage section, however, was not seriously damaged, though the space usually reserved for fruit will probably be needed for butter and other produce. It is not thought that fruit shippers will be seriously inconvenienced because of ample cool storage space in orchard districts.

The valuable equipment for the cool storage experiments of the Victorian Department of Agriculture and the Council for Scientific and Industrial Research was uninjured.

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BEHAVIOUR OF FRUIT IN COOL STORE.

Low Temperature Breakdown—Water Core.

Tests with Jonathan, Democrat, French Crab, Sturmer, Scarlet and Cox's.

Investigation by C.S.I.R.

THE COOL STORAGE OF FRUIT is one of the subjects now being investigated by the Council for Scientific and Industrial Research. In the tenth annual report of the C.S.I.R. just to hand the following is stated:—

(a) Storage Tests.—These have been conducted with the same varieties as in 1935, and further data have been obtained for correlating storage capacity and the occurrence of disorders in the fruit with field conditions, such as climate, soil type, crop size, and maturity, as well as delay in storage and storage temperature. Prestorage treatment with carbon dioxide as a means of preventing low temperature breakdown was extended to cover two pickings of five varieties.

(b) Chemical and Physiological Tests.—Results similar to those reported for 1935 were obtained. These tests are being used to investigate differences between varieties and different sized crops of the same variety, as well as rates of ripening in respect to the relative lateness of earliness of the season.

(c) Storage Disorders.—Storage pit was again practically confined to **Cox's Orange Pippin,** and was serious with light crops. Climatic conditions being favorable to good keeping quality, there was less liability to low temperature breakdown. In view of the widely held belief that liming decreased liability to breakdown, a trial was made with a limed plot but without positive results. The disorder did not occur or was negligible in **Jonathan, Democrat, French Crab, Sturmer** and **Scarlet Pearmain,** which varieties were susceptible in 1933, for example. Water core breakdown may develop in late-picked Cox's Orange Pippin, Jonathan, and French Crab. The practice of allowing Jonathans to hang late for coloring is likely to give rise to wastage in years of high temperatures.

These studies were conducted in Tasmania.

GAZETTE NOTICE.

Coomealla Packers Pty. Ltd. Capital: £20,000 in £1 shares. Objects: To act as agents for the sale and disposal in any part of the world of fruit (dried or otherwise). Reg. 21/12/36. Reg. Office: Sydney. (Lodged by Park & Hillard, solicitors, Mildura.)

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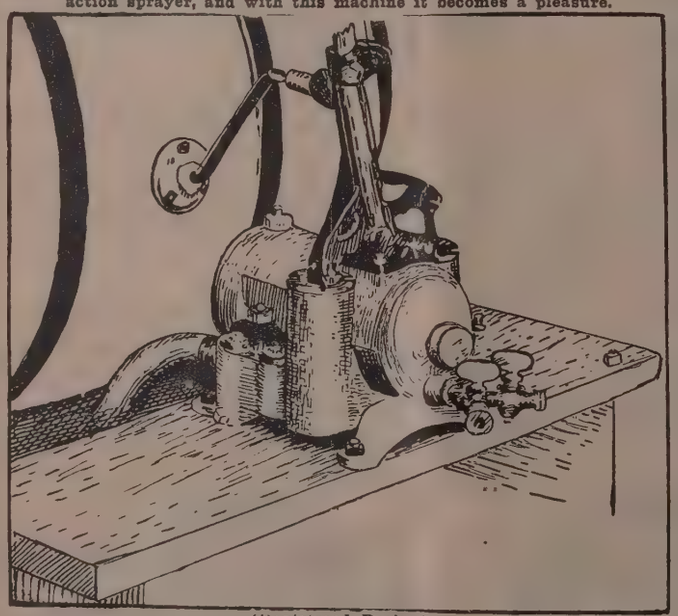

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SOUTH AUSTRALIAN FRUIT MARKETING ASSOCIATION.

The monthly meeting of the Executive of the S.A.F.M.A. was held at Adelaide on January 22, 1937.

There were present Messrs. H. J. Bishop (chairman), W. W. Miller, A. R. Willsmore, R. G. Hannaford, R. O. Knappstein, D. Norsworthy, G. Quinn, A. O. Peterson, J. B. Randell F. F. Redden, M. G. Basey, E. S. Mason, F. B. James, M. Vickers, H. N. Wicks, A. G. Strickland, P. R. B Searcy, and the Secretary. Apologies received from Messrs. R. A. Cramond, R. S. McDougall.

Junior Apple Packing Prize: A cup to be presented to Mr. C. J. Young, the winner of the Association's trophy for the Junior Apple Packing Competition at the Royal Agricultural Society Show was selected.

Correspondence: Letter dated January 21, from Mr. A. G. Strickland, advising that at the request of the Association he had communicated with the Department of Commerce in reference to the Pear variety "Lemon Bergamot" (strictly — Passans du Portugal) and exportation of this Pear would now be permitted during 1937.

Telegram dated January 15, from the President, Australian Apple and Pear Export Council, stating that Dr. Earle Page invited the Apple and Pear Export Council to a Referendum Conference in Sydney on January 19, and asking the views of the Association in regard to voting.

The President advised that a reply had been sent stating that we will remain neutral.

Sydney Conference: Mr. H. J. Bishop reported on the work of the Executive Committee Conference at Sydney on December 18 and 19. Every State was represented by delegates.

The quota for 1937 was:—

Australia	3,750,000
New Zealand	1,150,000
Total	4,900,000

Any shortage by one country could not be filled by the other.

Another matter dealt with was in regard to wrapping paper, and it was agreed to advise the Apple and Pear Export Council that this Association whole-heartedly supports the suggested wrappers, and we think that designs should be prepared by an expert and submitted to the State Associations for consideration.

It was decided to discuss this matter further at the February meeting, and members who have samples of wrappers and any other information available that would be useful are asked to bring it to the February meeting.

A lengthy pile of correspondence was dealt with.

Australian Market Committee: Mr. J. B. Randell, who is the representative of the Association on the newly-formed Australian Market Committee, reported on the resolutions passed at the Conference in Sydney in December, and outlined the proposed structure of the new Committee.

Separate committees would be formed in each State for the purpose of assisting in marketing fruit in Australia and collecting statistics, etc., for this purpose. The work of the State Committees would be co-ordinated by the central Committee which would carry out a comprehensive policy in regard to publicity, marketing, etc., and the Committee already formed in this State was the nucleus of the new State Committee.

Field Day.

Owing to the lengthy agenda it was unfortunately impossible for Mr. M. Vickers to give his address, but he very kindly consented to give this at the Field Day at Blackwood during February.

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South Australian News and Notes

INCLUDING OFFICIAL NOTES AND REPORTS FROM THE SOUTH AUSTRALIAN FRUITGROWERS' & MARKET GARDENERS' ASSOCIATION.

S.A. Fruitgrowers' and Market Gardeners' Association

Executive Meeting

MR. HOBBS presided at the monthly meeting on January 29, and the following members were present: Messrs. G. Schultz, C. J. Giles, R. Hunter, C. Ridley, F. G. Hill, F. Hughes, H. N. Wicks, J. Turner, T. Playford, M.P., G. Jennings, R. Cramond, L. J. Wicks, H. J. Coulls and J. B. Randell. Apologies received from Messrs. Staniford, W. J. Bishop, Petersen, Robson, Makereth, Strange and E. Giles.

The chairman welcomed Mr. A. G. Strickland, Chief Horticultural Instructor, who had accepted an invitation from the Executive to confer as to the adoption of some means to prevent sale of immature fruit on the markets. Several members gave instances of the great damage done by the sale of immature fruit, especially Goldmine Nectarines and Triumph Peaches, which would never ripen properly and give satisfaction to the buyer and consumer, who then refrained from buying the fruit later, when it had attained proper maturity. Although they were rather adverse to additional regulations sometimes, yet in this matter they thought the matter warranted one.

Mr. Strickland defined the powers which inspectors now had in prevention of sale of diseased fruit, and that which did not conform to present regulations, and inspectors now visited the markets frequently. Regulations dealing with this important matter were now in force in U.S.A. and Queensland, and were quoted by Mr. Strickland. He was desirous of assisting in raising the standard of the fruit which was being offered for sale in our markets, and it is the intention of the Department to prosecute, after warning by inspectors, those who offended against the regulations. There was need for the appointment of another inspector to assist in this work.

Mr. H. N. Wicks proposed: "That this meeting ask Mr. Strickland to frame a regulation dealing with the prevention of the sale of immature fruit." Seconded by Mr. L. J. Wicks and carried.

Mr. T. Playford moved: "That this Association requests the Government to appoint an additional inspector to deal with the 'silver leaf' trouble at the present time, and the enforcement of grade standards in the market." Seconded by Mr. F. Hughes and carried.

Mr. Strickland was heartily thanked for his attendance and ever ready willingness to assist the Executive in any way possible.

Letters from the Australian Dried Fruits Association, and the Farmers' and Settlers' Association of N.S.W. were read, in which they asked the co-operation of the Association in securing a "Yes" majority in the coming referendum.

It was soon evident that there was considerable diversity of opinion on the question, and after an animated discussion it was decided that no definite action be taken by the Executive.

Matters of considerable interest to Potato and Pear growers received some attention, but were left for further consideration by the two sections.

Messrs. Hughes, Cramond, H. Walker and Kimber were elected as a sub-committee, to devise some better method of recording sales of produce made by growers in the markets. Any suggestions bearing on this matter will be welcomed by the Committee.

Secretary reported that the first of the series of educational meetings would be held on March 17 at the Association's Board Room, when Mr. Strickland will speak on "Some Factors Affecting Fruit Setting." Members were reminded that the list of prices for fruit, fixed by the Fruit Industry Sugar Concession Committee, could be inspected at the Association's office.

The financial statement was read and considered very satisfactory.

Next meeting: Friday, February 26, 1937.

NOTICES.

Executive Meeting.

The usual monthly meeting will be held at Association's Board Room, on Friday, February 26, 1937, at 10.30 a.m.

Business.

To receive report re regulations dealing with immature fruit.

Reports from various sections and sub-committee appointed to devise better method of recording sales.

Any other business.

H. T. HOBBS, President.
W. J. KIMBER, Secretary.

Quarterly Educational Meetings.

The Executive has pleasure in inviting all members to attend the first of a series of Educational Meetings which will be held at the Association's Board Room on Wednesday, March 17, 1937, at 8 p.m., when Mr. A. G. Strickland, Chief Horticultural Instructor, will deliver an illustrated lecture on "Factors Affecting Fruit Setting."

This subject is most fascinating, and a knowledge of it is useful to all fruit and vegetable growers.

This is the only invitation members will receive, and the Executive hopes that a large number will attend.

Marion Branch.

The monthly meeting will be held in Sturt Hall on Wednesday, March 3, 1937, at 8 p.m.

Matters of importance await attention, and members are invited to suggest to the Committee subjects which they think should be considered.

I. R. ADAMS. President.
J. RAY DUNCAN, Hon. Sec.

Subscriptions for 1937.

Members are reminded that subscriptions for year ending August 31, 1937, are due.

Those who have not yet paid, are asked to pay Ron. Beck, in the Market, or Branch Secretary.

Please report if monthly issue of "Fruit World" is not being received.

W. J. KIMBER, Gen. Sec.

CELERY SECTION COMMITTEE.

ALL members attended a meeting which was held on January 15, and Mr. G. J. Strange was re-elected chairman of the Section. Members expressed their appreciation of the services rendered by Mr. Strange during his term of office as chairman. He thanked members for their confidence and took the opportunity of welcoming Mr. A. J. Hollister as a member of the Committee recently elected by the growers.

Regret was expressed at the retirement of Mr. L. J. Wicks from the Committee, on which he served as chairman for several years, and has assisted very materially in organising the Celery industry until it has reached its present importance, especially in respect to interstate export. It was decided to inform Mr. Wicks of the Committee's great appreciation of his excellent work on behalf of the Celery growers.

Mr. C. W. McRostie, who represents the Section so efficiently in Melbourne, was present, and reported on many matters connected with the disposal of Celery in Melbourne. The quantity sent to Victoria through the Section equalled that of last year, and the prices received for fair average quality, were better. Unfortunately, in many instances, the grading and packing were far from satisfactory.

The Secretary reported that about £500 had been distributed among growers as a rebate on Celery exported by them last season, and great satisfaction has been expressed by recipients.

As the Committee has realised the benefit of advertising in other States, further effort will be made during the coming season.

The decision of shipping firms to reduce shipping to Sydney to one boat weekly, is causing the Committee anxiety, as it is essential to keep the Sydney market more frequently supplied.

Mr. D. G. Wills was re-appointed to act as representative of the section in Sydney, and efforts are to be made to secure improvement in marketing arrangements, as the Committee is hopeful of increasing consumption of Celery in New South Wales equal to that in Victoria.

Secretary reported that practically all who exported Celery were now financial members of the Association and that the financial position of the Section was very satisfactory.

MR. GEORGE A. COLLETT.

MR. COLLETT, who is now Secretary of the Vegetable Section of the Association, has been connected with the vegetable industry ever since he left school, and is well known in the markets at the

Mr. G. A. Collett, Secretary, Vegetable section, S.A. Fruitgrowers' & Market Gardeners' Association.

east end of Adelaide. He has a very productive garden at Summertown, and did his own marketing for many years, and the experience gained as grower and market man, has been of great value to him and those associated with him.

A branch of the Fruitgrowers' and Market Gardeners' Association was formed in the Summertown and Uraidla District about 1920, of which Mr. Collett was President for two years. The branch functioned for several years, but the vegetable grower members, feeling that their interests were not efficiently attended to, decided to form a separate association, which was called the Hills' Gardeners' and Marketmen's Association, Mr. Alf. Day being President and Mr. Collett Secretary. This Association did excellent service for its members for many years, Mr. Collett doing very fine work as Secretary.

An event of much importance took place on October 21, 1935, when it was decided that the two Associations should amalgamate, and unitedly work for the benefit of the fruit and vegetable industry. Mr. Collett was appointed as Secretary of the vegetable section and organiser for the newly

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The Removal of Spray Residue from Apples and Pears

★

By A. G. Strickland, M.Agr.Sc., Chief Horticulturist, and R. Fowler, Manager, Blackwood Experimental Orchard, in the "Journal of Agriculture," South Australia.

—o—

The necessity for using sprays of various kinds in order to protect ripening fruit from insects and diseases is universally recognised. Such sprays are customarily applied at certain intervals during the growing season, often up to a few weeks before the fruit is harvested, and despite natural weathering, some of the applied spray must be present in a greater or less amount on the harvested fruit.

THE presence of spray residue on marketed fruit is objectionable, firstly because of its adverse effect on the general appearance of the fruit, and secondly because the arsenic content of the fruit may exceed the legal maximum prescribed by Health Regulations in the United Kingdom and elsewhere, i.e., 0.01 grains of arsenic trioxide per pound of fruit. In order to conform with such regulations it has been found necessary to reject for export any fruit which shows visible spray residue.

Prevention is ever better than cure, and before discussing methods of cleaning spray-marked fruit, short reference will be made to possible methods of avoiding excessive residue. The tendency for lead arsenate sprays to leave an objectionable residue has prompted extensive trials of other spraying materials for codlin moth control, but although many substitutes have been tested, no spray has yet been devised that will universally replace arsenate of lead. This season, the Department of Agriculture has incorporated in spraying trials in the Mount Lofty Ranges, Barossa district, and Murray River areas, plots treated with two promising new materials; these materials are non-arsenical, harmless to human beings, and in preliminary overseas tests are stated to have given control of codlin moth approaching that obtained with arsenate of lead. The showing of these materials in South Australian trials is awaited with great interest.

White oil emulsion, following earlier calyx sprays with arsenate of lead, has given better results in moth control and deduction of residue than any other substitute for arsenicals so far tested. Used under South Australian conditions, however, on delicate green-skinned Apples, such as Cleopatra, white oil sprays are dangerous, and growers are advised against them until further investigation has been made. In spraying experiments conducted at Blackwood last season, a white oil programme resulted in oil injury of 70 per cent. to 80 per cent. of the crop. It is of interest to note that Jonathan Apples sprayed with the same schedule as the Cleopatra fruit sustained no apparent oil injury.

Where harvested fruit still bears excessive residue in spite of the use of oil sprays in substitution for some of the arsenical applications, the fact that oil has been applied greatly complicates the problem of removing the residue. A residue of arsenate of lead may be removed with comparatively little difficulty, but if such a residue has been coated with a film of oil it is not so easily dispersed. If white oil is included in the spraying schedule on red varieties, such as Jonathan, and such inclusion does not satisfactorily avoid residue, then in the interests of removing the spray marks, it is far better to omit the oil altogether. Most trouble in this respect is experienced, when, after putting on several sprays of lead arsenate and achieving a fairly heavy residue, the orchardist optimistically closes his spraying season with oil. This practice seldom has the effect of dispersing the spray deposit, and serves merely to render the fruit unhappily resistant to any cleaning process which may be employed.

Generally speaking, a complete schedule of lead arsenate sprays will leave more or less residue, depending on weather conditions and methods of spraying. The subsequent removal of this residue is often facilitated by the addition of 1 lb. to 2 lbs. of hydrated lime per 100 galls. of lead arsenate spray when making the final applications. Growers are advised to add this lime to the last spray of lead, when it seems likely that they will have to take steps to remove the residue after the fruit is picked.

In the past, hand wiping has been employed extensively to remove excess spray, but even under the best conditions this method is inefficient. Wiping does not remove residue from the cavity and basin of the fruits, where the greatest concentration of arsenic usually occurs, and most growers know by experience that it is a laborious and costly process. Recently several types of wiping machines have been placed on the market, but although speedier, these machines are still inefficient, and some types result in puncturing and injury of the skins of fruit.

Removal of the spray residue by means of washing the fruit in a suitable chemical medium is cheapest and most effective, and the washing method is used extensively in other countries and States.

Fruit Washing Experiments.

Many different chemical washing media have been tested for removal of arsenical residue; some such materials have shown very inefficient removal, and others, whilst effectively removing residue, have resulted in considerable fruit injury. Two of the many possible materials only need be considered at this juncture, viz., dilute hydrochloric acid and a solution of sodium silicate or waterglass. Experiments with these two solutions have been carried out at Blackwood Experimental Orchard during the past two seasons, and as the following summarised results will show, dilute hydrochloric acid may be regarded as an efficient and safe remover of residue. Certain precautions are essential when hydrochloric acid is used on varieties of Apples having an appreciable percentage of open calyx tubes—such as Cleopatra—but it is more efficient than sodium silicate, and furthermore, although cost of material is not a big item, it is cheaper.

Results of Experiments in 1935-36. Residue Removal.

Cleopatra and Jonathan Apples were obtained from experimental plots sprayed according to the following schedules:—

(1) Six sprays of lead arsenate, 4 lbs. per 100 galls.

(2) Six sprays of lead arsenate, 6 lbs. per 100 galls.

(3) Two sprays of lead arsenate, 4 lbs. per 100 galls.; followed by four sprays of lead arsenate, 2 lbs., plus white oil, ¾ gall. per 100 galls.

(4) Two sprays of lead arsenate, 6 lbs. per 100 galls.; followed by two sprays of lead arsenate, 4 lbs. per 100 galls.; followed by two sprays of lead arsenate, 3 lbs., plus red oil, ½ gall. per 100 galls.

Representative quantities of fruit were hand-washed according to methods detailed in recommendations at the conclusion of this article, with various solutions; we will only consider dilute hydrochloric acid and sodium silicate (or waterglass) as other solutions utilised showed no advantages over these two. Thorough rinsing with fresh water after treatment with acid or sodium silicate was uniformly applied. In Table I. analyses of samples taken before and after washing indicate the relative efficiency of the two solutions above mentioned.

From Table II. it is seen that neither dilute hydrochloric acid nor sodium silicate washes have adverse effect on the keeping quality of Jonathan Apples. Applied to Cleopatras without due precautions, however, the former solution (HC1) may lead to mould attack of a proportion of fruits. Such mould attack is chiefly of the mouldy core type, and follows as a result of penetration of the acid solution through the open calyx tubes generally characteristic of a percentage of individual Cleopatra fruits. Mould spores are always present to same extent in wash water, and the penetration of acid solution provides favourable environment for the rapid growth of mould (notably Pencuillum sp.) near the core. The non-development of mouldy core where open calyx-tube Apples have been washed with sodium silicate is due to the fact that this latter solution has an alkaline reaction, and does not favour the growth of the particular moulds concerned.

Table II. shows that by immersing Cleopatra Apples in acid solution to a depth not exceeding 6 in., mould losses may be appreciably reduced;

TABLE I.—Analyses of Washed and Unwashed Fruit.

Grains of AS_2O_3 per lb. of fruit.

Spray Schedule.	Variety.	Unwashed	Washed in 1% Hyd. Acid.	Washed in 8% Sodium Silicate.
		%	%	%
(1)*	Cleopatra	0.0196	0.0098	0.0121
	Jonathan	0.0252	0.0092	0.0075
(2)*	Cleopatra	0.0214	0.0001	0.0152
	Jonathan	0.0257	0.0075	0.0114
(3)*	Cleopatra	0.0225	0.0050	0.0087
	Jonathan	—	—	—
(4)*	Cleopatra	0.0137	0.0024	0.0151
	Jonathan	0.0307	0.0109	0.0149

*Key to spray treatments shown in text above.

From a study of Table I. it will be seen that all spray schedules resulted in fruit having arsenical residue exceeding the tolerance. It further emerges that, after making due allowance for a technique of sampling for analysis which left something to be desired, dilute hydrochloric acid was effective in reducing the residue to below the tolerance of 0.01 grains of arsenic trioxide per pound of fruit, and 8 per cent. sodium silicate solution was scarcely as effective.

Effects of Washing Treatment on Keeping Quality.

In order to determine the effect on keeping quality of the various washing treatments, fruit washed in several ways was submitted to a storage trial. Sufficient fruit was held in cool store to enable two-case units of fruit under different treatments to be withdrawn from store and examined at fortnightly intervals over a period of three months. After withdrawal from cool store, units were held at ordinary atmospheric temperature for two weeks before examination.

During storage, the fruit from all treatments showed no disorders or blemishes other than mould development, of which mouldy core comprised the major type; further, mouldy core only proved troublesome in the case of Cleopatras subjected to certain methods of washing. The results are summarised in Table II.:—

further, that by following the acid wash with immersion of the fruit in a lime water bath such mould attack may be reduced to negligible proportions.

My means of ensuring shallow immersion, a grower in the Barossa area (Mr. H. F. Lock) has successfully applied the dilute hydrochloric acid dip to Cleopatra Apples.

Recommendations for Removal of Residue.

In the course of time the use of washing machines at central packing sheds may become more general, but at present the individual grower has, in most cases, to deal with his own fruit, washing or wiping it free from residue before packing or delivery to the packing shed. If an adequate water supply is available, hand washing in dilute hydrochloric acid is recommended.

(To Be Continued.)

Customer: "What is this device?"

Auto Demonstrator: "That shuts off the spark."

Customer: "And what is this thing for?"

Auto Demonstrator: "That shuts off the gas. And this other little device is the best feature of all."

Customer: "What does it do?"

Auto Demonstrator: "It shuts off the conversation on the back seat."

TABLE II.—Storage Trials on Washed Apples.

Mean Percentage of Fruit affected with Mould (Chiefly Mouldy Core) during the Storage Period.

Period of Storage.	Variety.	Unwashed.	Washed 1% HCl Deep Immersion (1)	Washed 1% HCl Shallow Immersion (2)	Washed 1% HCl Shallow Immersion followed by Rinsing in Lime water (3)	Washed 8% Sodium Silicate
14 Weeks	Cleo.	Nil	11.82	2.45	0.61	0.15
	Jon.	Nil	Nil	0.72	Nil	Nil

(1) Apples immersed in acid solution to maximum depth of 12 in. to 14 in.
(2) Apples immersed in acid solution to maximum depth of 6 in.
(3) Apples immersed in acid solution to maximum depth of 6 in., then immersed to maximum depth of 12 in. to 14 in. in lime water before final rinse.

(Continued from previous page.)

formed Society, which procures garden and orchard requisites for its members, who obtain considerable benefits by this co-operative work.

Mr. Collett takes a great deal of interest in the welfare of local institutions in the district of Summertown, and, being an able and fluent speaker, does much good service for religious bodies. His pastimes are cricket and bowls.

South Australia

MID-MURRAY NOTES

Dried Fruit Growers Urge "Yes" Vote at Referendum — Fumigating Citrus Trees — Apricot Harvest Satisfactory — Pear Crop Clean — Codlin Moth Checked by United Effort — The Currant Harvest.

(By Our Correspondent.)

"Don't guess, vote Yes."

The above slogan by a young Renmark girl—Miss Johnson—won a prize in the A.D.F.A. competition through our own wireless station, 5RM. The Referendum campaign is being followed very closely by all growers of dried fruits, and as the various groups assort themselves for and against the Referendum proposals it seems to me that the marketing aspect resolves itself into a fight between the primary producer and the interest of secondary industries, who have and hold every advantage of a high tariff without giving any consideration to the needs of primary producers. There also seems to be a fear in the minds of vested interests concerning the merchanting of primary products; that organisation by primary producers is not a thing to be encouraged.

The average elector usually awaits a lead from authoritative persons or organisations instead of debating the pros and cons in their correct perspective.

South Australian electors have been gradually following the sound arguments given by Mr. Menzies a few weeks ago, and the more they know of the issue the more sympathetic is their consideration for the reasonableness of the case for primary producers in getting the Referendum carried. When the marketing legislation was brought into force twelve years ago it was done by a vote of over 90 per cent. of growers, who were asked to decide the desirableness or otherwise of legislative control of dried fruits.

At the forthcoming Referendum it is possible for the public, who are not concerned with the marketing of primary products, to upset a structure which has taken years to build up.

The capital value of the dried fruits industry is estimated at £7.500,000, with an annual value of products of £3,500,000, and this return comes from aproximately 50,000 acres of land under irrigation.

Although a quantity of various dried fruits are produced under natural rainfall conditions in South Australia, by far the largest amount is produced on the irrigation areas. The River irrigation areas have found homes and occupations for 40,000 people, in addition to 18,000 required for seasonal occupation, all of whom are enjoying a fair standard of living. The wages paid by growers for seasonal labor in Renmark is £3/10/6 per week, yet the average income from the returns of nearly 300 dried fruit producers in Mildura, last year (which can be taken as a fair average of the rest of the industry) amounted to no more than the basic wage, or £180 per annum.

In the event of the referendum not being carried, our marketing regulations would undoubtedly break down, and further reduce the above income by compelling growers to accept world's parity, the price of which is governed by our competitor countries. A lower standard of living is accepted in these countries than in Australia, and to reduce our dried fruits to world's parity would undoubtedly lower the standard of living now in force.

Fumigating Citrus Trees.

For the past week it has been quite a common sight to see tents covering citrus trees in the process of fumigation. Red scale has made its appearance in various parts of this settlement, and the Government Inspector, Mr. F. Arndt, has made it his business to enforce the fumigation regulations in all cases where this scale has developed. Red scale can become a major pest if allowed to go unchecked, and by the combined efforts of the Citrus Association, and Mr. Arndt there should be a complete clean-up.

The Apricot harvest

is almost completed, and has proved better than was anticipated. Seasonal conditions favored the production of extra good quality fruit, and it is only natural, under the circumstances, that growers have taken a great deal more care with harvesting operations than when dealing with small undersized fruit.

Although the trees appeared to carry a crop below the average, the extra size of the fruit has in many cases made the crop a normal one, with the majority of fruit coming into the 3 and 4 crown standard.

Pear picking

for the local market commenced early in January, but as this market is only a very small one, only growers who have developed a continued connection over the course of many years have availed themselves of this opening. Picking for drying has just commenced, the fruit being now fully developed.

The Pear crop is particularly clean of codlin moth this year, and this may be due to the fact that natural parasites have been particularly busy, or it might be due to the enforcement of spraying regulations.

Over the past two seasons a temporary inspector has been appointed to see that spraying regulations are rigidily carried out, and where growers have been in possession of a few odd trees and would not bother to spray them, these were voluntarily grubbed out, thus lessening the moth population.

Three years ago the codlin moth dominated the Pear growers and caused such a severe infestation that under ordinary spraying conditions this pest seemed impossible to check.

It is significant that for the two years when spraying has been enforced, and a better state of orchard sanitation is carried out, growers of commercial quantities have taken greater pains to spray thoroughly, there has been a marked improvement in the production of clean fruit.

There is a fixed belief among many Pear growers that unless arsenate of lead is used at about twice the strength recommended by the makers, it will not be effective. This belief comes from a policy of desperation and was developed during the years of bad codlin infestation, but has no foundation in cold fact of a lethal dose of arsenate of lead. However, in the progress made with non-arsenical sprays, there is a likelihood in the near future of Pear and Apple growers having a suitable substitute. Let us hope that it will not be long before our investigators will be in a position to recommend one of the many under observation.

The Currant Harvest.

Last week we experienced over an inch of rain, which caused a great deal of anxiety among Currant growers, having in mind the disastrous rain just a year ago, which came at a critical period in the development of the fruit, and caused considerable damage to crops. This year's rain was unaccompanied by humid conditions and was followed by a drying wind, consequently, apart from a certain amount of berry splitting, the damage has been only slight. It is often wondered by growers why splitting of berries follows a rain, and the only logical conclusion arrived at seems to be that the roots are continually sending up a flow of sap through the system, a certain amount of which is transpired through the leaves.

As rain falls and places a film of moisture over the surface of the leaves and fruit, transpiration is prevented. The only way the superfluous moisture can escape is through the fruit, which is already filled with sap, consequently the berries split, which relieves the congestion. When fruit is fully sugared it seems to take a good deal more rain to split the berries than when sugaring just commences. The density of the ripe fruit probably allows a certain amount of dilution without splitting.—Nemo.

Renmark, S.A., 20/1/37

Western Australia

Maturity Dates for Apples.

A MEETING of the W.A. Fruit Organisation Board was held on January 7. Mr. G. W. Wickens (Supt. of Horticulture) presiding. Delegates attended from Bridgetown, Mount Barker, Donnybrook and the Eastern Hills' Associations, together with representatives from the shipping agents.

The maturity dates at which Apples could be shipped during the coming season were decided as follows:—

United Kingdom and Continent of Europe.

Fremantle—

March 1: Jonathans.
March 1: Cleos. (from early districts, principally Argyle).
March 5: Cleos. (other districts), Dunns.
March 29: Granny Smith.
April 12: Nickajack, Romes, Statesman, Democrat.
April 26: Rokewood, Yates, Doherty.

Albany—

March 5: Jonathans, Cleos. and Dunns.
Other varieties—same dates as Fremantle.

Countries Other Than United Kingdom and Europe.

February 15: Jonathans, Cleos., Dunns.
March 18: Granny Smith.

TASMANIA

Grading and Packing of Apples.

Methods of Our Canadian, U.S.A., and Argentine Competitors.

Community Packing Houses Advocated.

At Woodbridge (Tas.) early in January, an address was given by the Chief Horticulturist, Mr. P. H. Thomas, the subject being "The Grading and Packing of Apples in Canada, U.S.A., and Argentina." Commencing with the methods of production, a general review of the whole system of grading and packing was given by means of a series of interesting lantern slides.

Packing and grading has reached a very high standard in these centres of production, practically all the fruit produced is put through community packing houses and exports are made, generally on an f.o.b. basis, to all parts of the world.

The lecturer stated that one could not but be impressed with the efficient organisation in these centres. This was not so in the past, and growers recounted the problems of the early days, many of which are at present being experienced by the Tasmanian industry. It has frequently been stated that the Tasmanian orchardist is difficult to organise. Continuing, Mr. Thomas said:—

"If the codlin moth was as serious in this State as it is in parts of U.S.A., the bulk of the growers would be putting their fruit through community packing houses within twelve months, as very few individuals could afford the necessary machinery to remove the arsenical residue accumulated on the fruit from the control measures employed."

The lecture concluded with a number of views of the interior layout of packing houses, grading and nailing down machinery, and the different fruit experiment stations visited during the investigations. Amongst the former were included some of the installations in the newly developed Rio Negro Valley, Argentina, together with illustrations of the type of packing and presentation adopted. "The N. American methods have been virtually transplanted into this country," added Mr. Thomas, "and I am showing you these photographs so that you may be aware of the nature of the competition to be expected on the United Kingdom during the Australian season in the near future. Addresses were given at Huonville on 20th, Cygnet on 21st, and Franklin 27th January.

South Australian Cold Stores Ltd.

APPLE AND PEAR STORAGE.

EXPORT FRUIT RAILED DIRECT TO SHIPS IN INSULATED VANS

CENT. 3030. **MILE END, S.A.** CENT. 3030.

Fruit Trees

In All Varieties, Specially Raised and Cultivated for the Needs of the Orchardist.

RELIABLE ALMOND TREES...
Best Commercial Varieties.

ROSES, PLANTS AND SHRUBS of Dependable Quality Always Available.

LASSCOCKS NURSERIES

LOCKLEYS, S.A.

Phone: L 4149. **Phone, Write, or Call.**

Motor Cars, Trucks, Tractors

KEEP BATTERY PLATES COVERED.

ALTHOUGH the modern car battery requires little attention, there are certain precautions which the owner must not neglect if he wishes to preserve his battery for its normal length of life.

General Motors-Holden's Ltd., advise all Vauxhall owners to ensure that the plates are covered by distilled water, adding the water usually once a week in Summer, and twice a month in Winter. It is unnecessary to add acid to the battery unless the container becomes fractured or deterioration of the sealing compound, with consequent loss of acid, occurs.

Petroleum jelly is an excellent preventive of corrosion of the terminals and connections. If corrosion should occur, clean the terminals with a strong soda solution before applying vaseline.

The connection between the battery and the frame should be examined occasionally as looseness frequently causes burning out of headlight bulbs. The filler plugs should also be examined to see that they are tight and that the top of the battery is dry.

At regular intervals hydrometer readings of the battery should be made by a service station. If the battery is over half discharged, it should be used sparingly until the specific gravity is brought up to at least 1.18 in New South Wales, Victoria, South Australia and Tasmania, and 1.150 in Queensland, Western Australia, and Northern Territory.

Full Pressure Lubrication.

The 1937 engine lubrication system on the 1937 Vauxhall 14 is most efficient. The crankshaft is drilled with an oil passage through which the lubricant is forced by pressure to the connecting rod bearings. From the first turn of the engine the main bearings of the Vauxhall 14 are lubricated. But, Vauxhall's lubrication system does not stop at this. The connecting rods, too, are rifle drilled with oil passages, so that the oil is forced up to lubricate the hard-worked piston pins, a thoroughness of lubrication that is offered by few other cars of Vauxhall's type and price class.

Generator Charging Rate.

Before a car leaves the factory, the charging rate of the generator is fixed for normal conditions. The adjustment should on no account be altered by the owner as the generator may be seriously damaged. When changed conditions are encountered it may be necessary to have the charging rate altered, and this should be done by a reputable dealer with accurate instruments.

A lower charging rate is sometimes necessary on an Oldsmobile if the car is to be used for a long trip, not requiring frequent stopping and starting, or if it is seldom driven at night, and the lights in frequent use.

There are several conditions under which the charging rate should be raised to prevent the battery from becoming undercharged under heavy use. A number of short trips with frequent stopping and starting, a large number of electrical accessories on the car, normal use in cold weather, or frequent night driving with consequent drain on the battery through use of the lights—these all constitute a greater drain on the battery.

If the car is used very infrequently, it may be that the generator, even at its maximum charging rate, cannot always keep the battery fully charged. Under these circumstances the battery should be charged occasionally at a service station.

THE FARM TRACTOR.

Loss of Fuel.

THERE are many ways in which fuel may be wasted. Overflooding the carburetter when starting the engine accounts for a considerable loss in the aggregate, says a writer in "Farmer and Settler."

If the unions in the fuel pipe line are not maintained in a perfectly tight condition the slight leakage that occurs means a continual waste whenever the engine is not running. Using a higher or a lower gear than desirable for the load and speed is also a costly business, because it implies increased fuel consumption without a corresponding increase in actual work performed. But perhaps the most wasteful mistake of all is the use of an over-rich mixture—a frequent happening, because of the improved flexibility and acceleration which results.

In this connection it is interesting to refer to some experiments which were recently carried out on a fleet of motor buses. The object of the experiment was not, however, in connection with fuel consumption. It was desired to ascertain what percentage of carbon monoxide was contained in the exhaust gases. This is an important point, of course, when the 'buses work in crowded areas. It was found that under normal conditions there was 6.5 per cent. of carbon monoxide present. Under the most favorable conditions the percentage was about 2.

This finding is of interest to the tractor operator, not because the subject of carbon monoxide bothers him to any extent as the outfit spends most of its time on the land, but because of what a high percentage of this gas implies. It was discovered that the 6.5 per cent. of carbon monoxide was due to the setting of the carburetter: set to provide a rich mixture to facilitate getting away from rest and attaining the normal running speed. The motor 'buses having a high percentage of carbon monoxide in the exhaust gas consumed considerably more fuel than those with the minimum percentage of about 2. The wastage resulting was in the neighbourhood of 30 per cent.

The moral of this is that it is extremely costly to set the carburetter to give an over-rich mixture, because the advantage accruing—enhanced flexibility and acceleration—do not compensate for a waste of one gallon of fuel out of every three gallons purchased. It may be added that the presence of carbon monoxide means that the combustion of the firing mixture is incomplete, and it is this which accounts for the resulting wastage of fuel.

INSPECTION LAMPS.

Although some limit must be put on the number of gadgets and accessories which should form part of the normal tool kit carried in the car, the inspection lamp should not be forgotten. On many models plug-in contacts for such a lamp are provided on the instrument panel, but in any case it is easy to install contacts or to fit spring clips to the ends of the lamp wire so that it may be quickly connected direct to the main battery terminals. See that there is enough flex to allow the lamp to be used on the remotest part of the car, and preferably protect the bulb with a wire shield.

24 HOURS CAR SERVICE.

Preston Motors Open Day and Night.

We have been asked to advise our readers that Preston Motors Pty. Ltd. have now instituted a 24-hour service at their Spencer-street Service Station, corner Spencer and Dudley streets. Country travellers and market gardeners can receive expert attention by skilled mechanics from 7.30 a.m. on Mondays until 11 p.m. on Saturdays throughout the year. No overtime charges are made for night repairs and free towing is given within a radius of 20 miles from the Melbourne G.P.O. This is the latest of many services introduced by this company, metropolitan distributors of Chevrolet cars.

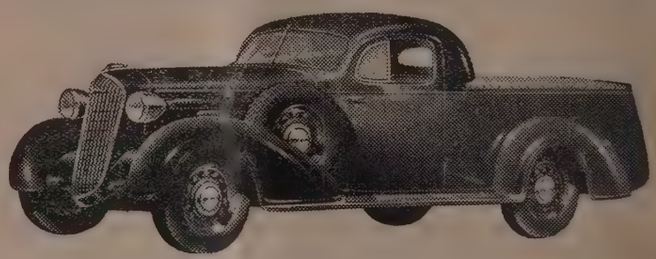
TO FIRE-PROOF CANVAS.

In "Successful Farming" (Iowa) the following directions are given for fire-proofing canvas, curtains, drapes, etc. Mix 1 lb. of ammonium phosphate and 2 lb. of ammonium chloride in 6 quarts of water, and then soak in it the article it is desired to render fire-proof. Lightly squeeze out the excess liquid and let the canvas dry with the ammonium salts in it.

For the more delicate fabrics use 10 oz. of borax and 8 oz. of boric acid dissolved in a gallon of water. Wring very lightly and allow to dry, but do not rinse the material.

Black: "What's your son going to be when he gets through his exam.?"
White: "An old man, I'm afraid."

Save Money with Chevrolet
The Cheapest Full-Sized Utility



Illustrated is the Chevrolet "6" Open Delivery with Coupe Front.

When you own a Chevrolet Utility it saves you money—on the day you buy and every mile you drive. The fact that Chevrolet is the lowest-priced full-sized utility is your first saving. Then, you'll find that Chevrolet is the lowest consumer of oil and petrol you've ever had. Next, you'll realize that Chevrolet is the most powerful in its price-class. And, finally, when you own a Chevrolet, its utter dependability, long life and low maintenance cost will satisfy you of your wisdom in buying it, as it has satisfied more than two million owners throughout the world. Before you buy your next utility come in and try the latest 1936 Chevrolet.

Chevrolet Trucks Win Praise of Their Owners

Read What This Owner Says:—

"In 1930, I bought a 6-cylinder Chevrolet truck, and I think it only fair to tell you of the wonderful run I've had with it. After 85,000 miles of gruelling work, it still gives 15 to 16 miles to the gallon with a 30 cwt. to 2 ton load over a 'give and take road.' A gallon of oil does for from 900 to 1,000 miles, and repairs to date have cost less than £5."—A.W.U., Corowa.

The Chevrolet engine is a real worker, built for long life and hard toil. Its full-length cylinder-cooling, thermostatic heat control, crankcase ventilation, sprav-cooled exhaust valves and pressure steam lubrication are among the features which make it the longest-lived of truck engines. The Chevrolet engine is built to last the life of the truck. Chevrolet Trucks range from the popular 30-cwt. model to the 5-ton Mapleleaf semi-trailer.

Six Cylinder
CHEVROLET
Long Life

Sold and Serviced by Chevrolet Dealers throughout Australia.

Metropolitan Distributors:

PRESTON MOTORS PTY. LTD.

114 Franklin Street, Melbourne

DRIED FRUITS NEWS AND NOTES

The Coming Referendum

It is quite certain that in the Australian fruit industry opinions are ivided on the subject of the referendum with regard to marketing. To dvocate "Yes" or "No" vote in these olumns would offend readers, and hus this subject must be treated as ne in which the private judgment of itizens must be respected.

Advocates of both sides are sinere and earnest. Growers of dried ruits are vigorously at work to secure , "Yes" vote; growers of fresh fruits old divergent views. To those who re inclined to vote "No" the dried ruits growers say: "Even if you do ot desire these controls in your own ndustry, please do not let your vote revent us from having the powers ve need."

However, an intelligent vote is deired, and we are setting out hereinder the case for both sides.

Dried Fruits Association Urges a "Yes" Vote on the Marketing Question.

TWO QUESTIONS affecting the Commonwealth Constitution are to be voted upon by Referendum on March 6.

One is in relation to Commonwealth control of aviation, and the other has reference to marketing. Details have been fully published in the press, and both sides of the question have been placed before voters.

On the subject of marketing, the Chairman of the Australian Dried Fruits Association, Mr. H. D. Howie, in urging a "yes" vote, writes as follows:—

We feel we should place before you the position of the dried fruits industry, and some facts concerning it.

The recent decision of the Privy Council in the James' case has placed any regulation or control of the interstate trade of Australia beyond the power of any Government, either State or Commonwealth, and has rendered all marketing legislation designed to establish organised orderly marketing in valuable exporting primary industries, established in several States, ineffective. This leaves dried fruit and butter control ineffective, but still leaves marketing legislation of an industry established in one State only, quite legal, therefore, sugar and rice control remains effective.

The Dried Fruit Act was made law in 1924, when the production of dried fruit in Australia was 44,000 tons. Since then the Governments of the four dried fruit producing States and the Commonwealth Government have re-enacted the legislation on several occasions, and the industry expanded to a production of 78,000 tons in the year 1933. The control legislation which was initiated by the States in 1924 and co-ordinated by the Commonwealth Government at the request of the States in 1928, is vital to the welfare of the industry in the future.

Fifty per cent. of the production in Australia is from returned soldiers Repatriation Schemes, which settle over 2,000 returned soldiers in the industry, and the legislation allowing the control of marketing is essential to the welfare of these men and their wives and children.

The industry is an important one to every business man, whether professional, industrial or commercial, because there are 40,000 people living in the dried fruit production centres on the River Murray, settled on 50,000 acres of land with only 10-inch rainfall. The annual production value is £3,500,000, and the capital invested is £7,500,000.

The 50,000 acres of Australia's semi-arid land occupied by the industry produces more annual income than 100,000,000 acres of similar adjoining land under wool, and carries a greater population than the whole of the 680,000,000 acres of Australia's under 10-inch rainfall land (mining excluded), which represents over one-third of Australia's total area. (These figures can be proved by reference to the rainfall and population map on pages 49 and 520 of Commonwealth Year Book No. 28.)

The industry has carried closer settlement into Australia's semi-arid country. No other primary industry (except mining) has ever accomplished this.

The industry pays Arbitration Court Award Wages to its workers. It buys its requirements from industries established under the protection policy of Australia.

Business men of South Australia, Victoria and New South Wales know the value of the irrigation settlements to their businesses, and we candidly ask, can you afford to risk the welfare of this industry?

Controlled marketing with a compulsory export is essential to obtain the best results from preferences and tariffs, and as established under the Dried Fruits Acts, has only given Statutory power to enforce a certain quota, which crop statistics show it will be necessary to sell in export markets, but the quota saleable in the Commonwealth can be sold by grower or dealer when, where, how, and at what price he likes, he therefore enjoys absolute freedom in the sale of the home quota. This form of control eliminates speculation, and makes for uniformity of prices, which is undoubtedly beneficial to buyer, seller, and the general public.

By voting "YES" you allow the system which has been in operation in Australia for the past 40 years to continue. For 28 years the export quota system was carried voluntarily; the last 12 years the same system has been made compulsory, a necessity when the immense expansion of the industry under repatriation took place.

A "YES" vote ensures that every grower will obtain an equitable share in both home and export markets.

A "YES" vote means no change in the established custom in the industry over the past 12 years.

A "NO" vote means drastic changes and disastrous consequences to the dried fruits industry, which is now an important export industry.

A "YES" vote will not increase the cost of living to the general public.

A "NO" vote will definitely reduce the purchasing power of every producer and worker and their women and children in the dried fruit producing districts.

We ask you to support a "YES" vote at the coming referendum.

Conferences have been held in various parts of the Commonwealth for creating Committees which will work for "yes" votes.

Opposition, however, is developing in South Australia, Western Australia and Tasmania. Mr. R. S. Richards, M.P., immediate past-president of the S.A. Branch of the Australian Labor Party, is strongly opposed to piecemeal altering the Constitution, favoring a convention when all matters affecting the improvement of the Constitution can be attended to.

"The Advertiser," Adelaide, in a leading article on January 12, contends that the Referendum is unnecessary, stating that the Commonwealth Parliament already has full power to do justice to primary producing interests. Attention is directed to the rejection by the Government of the proposal moved by Senator Badman, in favor of limiting the marketing powers under the proposed constitution amendment to "foodstuffs derived from primary production," which would thus have done away with arguments that the Commonwealth is seeking powers that are too sweeping.

REFERENDUM CAMPAIGN.

Dried Fruits Representatives.

At a conference convened by Dr. Earl Page in Sydney on January 19, committees were formed, representative of the various industries, to support the "Yes" campaign on the forthcoming referendum vote. The following names are announced as the executive committee representing the dried fruits interests:—Messrs. H. D. Howie and G. A. W. Pope (S.A.); T. Steele, M.L.C. (N.S.W.); Parker Maloney (Vic.); A. Yeates (W.A.), and Alex. Bell (Commonwealth). Messrs. Bell and Howie were also appointed to represent dried fruits on the finance committee.

"No" Case.

The Premier of South Australia (Mr. Butler) states—

The alteration of the Constitution is unnecessary. The excise and bounty scheme does not necessitate any alteration of the Constitution or any interference with Interstate free trade.

Senator Duncan Hughes, who is himself a grower of dried fruits, urges an emphatic "No" vote. He states that whilst the control of dried fruits marketing has been beneficial to a good many growers, he was not prepared, on the chance of giving them and the one or two more industries some material advantage, to apply restrictions to every other form of production in Australia, primary and secondary. Interference with trade was being completely overdone. The proposed Constitutional amendment should have been limited to "raw or processed primary products, being foodstuffs."

The powers sought by the present Government are too sweeping. Section 92 of the Constitution now reads:—

"On the imposition of uniform duties of customs, trade, commerce and intercourse among the States, whether by means of internal carriage or ocean navigation, **shall be absolutely free.**"

The amendment sought is 92A as follows:—

"The provisions of the last preceding section shall not apply to laws with respect to marketing made by, or under the authority of, the Parliament in the exercise of any powers vested in the Parliament by this Constitution."

Best Market Prices

PROMPT SETTLEMENTS

I. Friedmann

FRUIT DISTRIBUTOR,

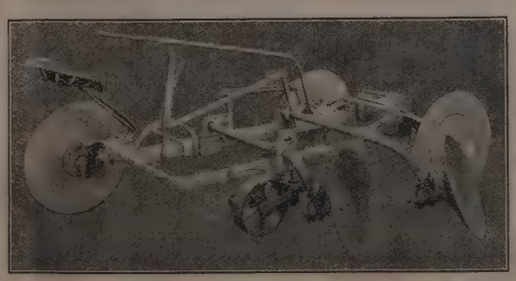
LONDON

20 BEDFORD CHAMBERS, COVENT GARDEN.

Large Clientele for Dried and Canned Fruit.

"HILLMAN" ORCHARD STRIP PLOW

Double Furrow



A sturdy, strong plow equipped with reversible discs to enable the operator to plow up to, or away from the trees. Operated by a single lever and with nothing to catch branches of trees. To facilitate the movement of the plow around the orchard the discs are movable and lift clear of the ground.

The steering arms are drop forged from the best mild steel and the main wheels are equipped with ball bearings.

Two medium horses can work this machine all day without tiring. A machine may be obtained for a trial at any time.

Further particulars apply . . .

HILLMAN & KEOGH

Implement Manufacturers

Shipley Street, Box Hill, Melbourne, E.11

In the official "No" case published in the pamphlet issued to electors, the following is stated:—

"The important word of the amendment is "Marketing." Just what that means no one knows. But it appears to cover every form of control that has been used—fixing quotas and setting up pools based on compulsory requisition or upon some indirect means of compulsion."

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Many dried fruits growers would prefer that the word "marketing" had been more clearly defined and they disagree with the decision of the Government to leave the word "marketing" with unlimited powers.

If there is disagreement on this point, what will be the next point of disagreement? Is the present Government infallible?

Here is another paragraph from the official pamphlet.

"In August, 1930, Mr. Menzies was in the Victorian Assembly. He spoke upon the Marketing of Primary Products Bill. His speech will be found in Volume 182 of the Victorian "Hansard." 'I am prepared,' he said, 'to oppose this legislation in season and out of season, on any clause and at any time.' He was as good as his word. 'It is ludicrous,' said he, 'to suggest that you can put up the prices of important commodities of the kind I have mentioned without reducing what the ordinary consumer will be able to buy week by week with his wages or salary.'"

It has since been argued by Mr. Facing-both-ways Menzies, that the powers sought under the Constitutional Amendment are really to give effect to legislation already enacted by State Parliaments—and in this, of course, the dried fruits legislation is specially mentioned in speeches. But why not state so plainly in the proposed amendment; further, the proposed amendment might be safe with the present Government, but what would happen with a Labor or Socialist Government having unlimited powers over marketing?

The Commonwealth Government already has ample power to bring about an equalisation system between prices for local market and for export, and there is thus no need for a referendum, conferring upon the present or any future Government unlimited powers with respect to marketing.

1936 EXPORT CLOSES WELL. NO CARRY-OVER.

Prospects Favorable.

The Commonwealth Dried Fruits Export Control Board advises that since the last bulletin was issued 942 tons of Australian dried fruits were sold in Great Britain. 505 tons of Lexias averaged £30 per ton; 158 tons of Currants, £27/6/6; and 279 tons of Sultanas averaged £46/11/1 per ton. This advice may be taken as the final bulletin relative to the 1936 crop, as out of 25,870 tons shipped to Great Britain there remains only 288 tons spread over the London, Glasgow, Liverpool, Manchester, Hull and Bristol trade. The average prices realised for the season to date are:—Sultanas, £42/17/5; Currants, £30/4/4; and Lexias, £40/11/- per ton. The complete clearance of the Australian harvest prior to the advent of the new season's fruit in the market is exceptional, and the outlook in all markets is favorable for the coming season, the one risk being seasonal conditions during the critical period of the year. So far, with the exception of the Currant crop, the outlook is satisfactory.

S.A. DRIED FRUITS BOARD.

Report of January Meeting.

THE first meeting of the year was held on January 13, when all the members and the Secretary were present.

The Secretary (Mr. W. N. Twiss) reported at length on the position of the trade agreement between the A.D.F.A., registered dealers and the State Boards and produced copy of the proceedings of the meeting of the South Australian and New South Wales Committees. He reported that a circular, signed by all members of the South Australian Committee, had been sent to all growers throughout the State.

Secretary further reported on arrangement made with the Department of Commerce for the appointment of an additional Grading Inspector in the metropolitan area, and for an inspector to be available in the non-irrigated areas for the grading of first deliveries of new season's dried Apricots.

A letter was received from the New South Wales Board recommending that the levy imposed by the State Boards be on a unform basis, and it was agreed to refer the matter for a recommendation by the Consultative Committee, which would be meeting at the end of January.

In the matter of the reported shortage of available stocks of 1936 season's Sultanas and Lexias, Secretary was directed to ascertain the position and to report to the next meeting of the Board.

The annual report of the Chief Investigation Officer (Mr. R. G. Birt) for the year ended 31/12/36, was submitted. Copies were distributed among members for consideration at the next meeting of the Board.

An application was submitted by a packing organisation for permission to sell dried fruits at a fete being organised for public charities. The fruit was being donated by growers, and a request was made to waive the conditions in regard to fruit being required to pass through a registered packing house or through the usual marketing channels. It was resolved that the application be not granted, as the Board has no power to suspend the regulations in such circumstances.

A new registration was granted for a packing house at Blackwood, limited to the processing of dried tree fruits and several applications for renewal of packing registrations for the year ending 31/12/37 were granted. Three new dealers' applications were considered and granted, as well as applications for renewals for 1937.

Financial and routine business was also transacted.

? ? ? ? ? ? ? ? ?
QUERIES QUESTIONS DOUBTS

As to the Best Outlet for Your Fruit can be dispelled by consigning it to

T. J. POUPART LTD.

COVENT GARDEN
LONDON, W.C.2.

SOUTHAMPTON BRISTOL LIVERPOOL HULL

Account Sales rendered are the best test of Salesmanship. On that test we have emerged from obscurity in 1895 to world-wide repute in 1935

Consignments of Oranges Solicited

Separate Department for Dried and Canned Produce and Pulp.

— AT —

SPITALFIELDS MARKET
London, E.1.

Tasmanian Growers ship through Eric E. Burgess, 88 Collins Street, Hobart.
Victorian Growers ship through Fred J. Andrew, 153 William Street, Melbourne.

Producers' Co-operative Distributing Society Ltd.

Are now paying a Bonus of 10% on all Commissions charged to regular clients of the Fruit & Vegetable Section for year ending Sept., 1935

Send Your Consignments
TO US

MELBOURNE & SYDNEY.

RIED FRUITS NEWS AND NOTES—(Continued).

NEW SOUTH WALES DRIED FRUITS BOARD.

Election of Members.

THE date for the triennial election of members of the New South Wales Dried Fruits Board has been fixed by the Minister for Agriculture as February 15, 1937.

The Board consists of five members, namely, a Chairman, Mr. G. J. Watt, a Commissioner for Water Conservation and Irrigation, who is the Government nominee—and four elected members.

The sitting elected members will hold office until March 1, 1937. They consist of:—

Mr. E. J. Hudson, of Yenda, representing growers of dried vine fruits whose holdings are situated on the Murrumbidgee Irrigation Areas.

Mr. L. B. O'Donnell, of Curlwaa, representing growers of dried vine fruits whose holdings are situated in the State of New South Wales other than on the Murrumbidgee Irrigation Areas.

The Honorable Thomas Steele, M.L.C., of Sydney and Young, representing growers of dried tree fruits whose holdings are situated in the Young and Koorawatha Districts.

Mr. P. Cox, of Griffith, representing growers of dried tree fruits whose holdings are situated in the State of New South Wales other than in the Young and Koorawatha districts.

Messrs. Hudson, O'Donnell and Cox have been returned unopposed to represent the growers they now represent. The Honorable Thomas Steele, M.L.C., of Sydney and Young, and Mr. I. C. Maydwell, of Maimuru, via Young, will contest the election to represent dried tree fruit growers in the Young and Koorawatha districts.

HOW TO PRUNE GRAPES.

ASSERTING that the pruning and training of Grapes are two distinct operations with different objectives, but that the proper handling of Grapes is actually much less complicated than the pruning of fruit trees once a few fundamentals are mastered, Prof. F. E. Gladwin, Grape specialist at the State Experiment Station at Geneva (U.S.A.) says:—

"Before attempting to prune Grapes, the pruner must understand how the Grape bears its crop. The fruit is borne near the base of the shoots of the current season, and the shoots are borne on the wood of the previous year's growth. Assuming that a thrifty Concord Grape vine should yield 15 pounds of Grapes, provision must be made for a sufficient number of bunches of Grapes to give the desired yield. As each shoot bears two or three bunches which will weigh from a quarter to half a pound, it will be necessary to leave 15 to 30 shoots on the canes of the preceding year. Pruning consists of selecting the canes that supply the required number of shoots and removing the remaining canes.

"Grapes are also pruned to make well-proportioned plants with the parts so disposed that the vines are to the highest degree manageable in the vineyard. This is 'training.' Grape growers usually speak of both operations as 'pruning,' but it is well to keep in mind that the two have different objectives."

Winter pruning is advocated, although it is stated that pruning can be done without danger of injuring the vines at any time after the leaves drop in the Autumn until the buds swell in the Spring, providing the wood is not actually frozen at the time. However, pruning should be delayed until after a heavy freeze in the Autumn, so that immature wood will be killed and withered and can thus be easily identified and removed.

GROWING SULTANAS IN TURKEY.

Free Service to Growers.

Climatic conditions enable vines to be cultivated in practically all districts in Turkey. In 1933-34 the area under vines was 854,600 acres, according to the Director General of Statistics. The best known varieties are Rozakis, Sultaniyé, Muscats and Chavouch, and of these the most important variety in external trade is the Sultaniyé (seedless). Rozakis are consumed fresh, and Muscats are mainly used for the production of wine. The dried Grape production has shown definite expansion in a number of regions, especially in the vilayets (Turkish provinces) of Smyrna, Gazi-Antep, and Nigdé. In these provinces, however, produce extensively red Raisins, the exportation of which is very small.

The bulk of the Sultanas of the export trade is produced in the Aegean region, where in 1935 the area under seedless Grapes increased to 172,900 acres, as compared with 157,100 acres in 1932. Smyrna and Manisa are the principal districts, with 49,400 acres and 59,300 acres respectively under these vines. Flavored varieties are cultivated in nurseries established by the Government and are distributed gratuitously to the cultivators. The number of licenses issued under this plan, according to the Turkofis, was 2,500,000 during 1936. An institute for viticulture engaged in research on pests and epidemics as well as regional stations with specialists on viticulture have been established by the Government, and provide a free service to growers.

The production of Sultanas was seriously affected a few years before the War by an invasion of phylloxera, mildew and black rust, which necessitated the re-establishment of the greater part of the vines. The area increased subsequently, but was again reduced, with a shortage of cultivators, during the World War and the War of Independence. The upward trend was resumed in 1924, and has since been continuous, apart from setbacks due to unfavorable weather conditions. The peak year was 1900; the largest crop since then was produced in 1935, and amounted to 80 per cent. of the output in 1900.

Report on London Season

Mr. L. J. Cleary Returns.

Upon his return from London in December, Mr. L. J. Cleary (Aurora Packing Company Pty. Ltd.), said that he found that Australian Sultanas landed in Great Britain in remarkably good condition, though some fruit in the early part of the season suffered from early picking and consequently lacked sugar content.

Mr. Cleary has gone to England for the past three years to assist in disposing of the Australian export packs, and has had every facility for studying the export position as related to dried fruits. Due to the policy of the Dried Fruits Control Board and the control exercised in Great Britain, Australian growers have been saved many thousands of pounds, claimed Mr. Cleary. It is expected that again there will be no carry-over from 1936, so that Australia can approach the new season with a clear market.

During his visit, Smyrna and Cretan shipments arrived in poor quality owing to broken weather conditions during their drying period, an unusual experience, and Australian stocks were sold at appraisement prices or better.

Australian Sultana growers, stated Mr. Cleary, can approach 1937 with quiet optimism, and this year should prove a paying one. Unfortunately, the quality of all Currants arriving was low, and the Board had to clear them whenever possible. This was also the experience of the stocks landed by Greek shippers. As a result of wider distribution, the sales of Australian dried fruits should extend in Great Britain.

NEW SEASON'S PRICES.

Dried Apricots.

Although it is estimated that the pack will be smaller this year than in 1936 the crop prospects suggest that the quality of fruit will be high. The A.D.F.A. anticipates a good demand for dried Apricots within the Commonwealth this year.

The new season's prices have been fixed, at per lb. for 28-lb. boxes, as follows:—

	Fancy.	Choice.	Standard.
	s. d.	s. d.	s. d.
4-crown	1 3	1 2	1 1½
3-crown	1 2	1 1	1 0¾
2-crown	1 1	1 0½	1 0¼
1-crown	—	0 11½	0 11

Apricot slabs are fixed at 1/- per lb., and plain grade at 11½d. per lb.

NEWS IN BRIEF.

The Victoria Dock Cool Stores, Melbourne, were severely damaged by fire on January 18—the loss is estimated at £500,000.

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The Victorian Railway Commissioners have removed the surcharge of 25 per cent. previously charged on open case (or unlidded) fruit.

GRUBBING
WITH A
"DIGGER" WINCH
A Man can uproot more Trees and Stumps in a Day than he would dig out in Ten Days
Thousands in Use
It earns its Famous LOW PRICE in a Few Days
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Orchard Equipment

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EFFICIENT, DURABLE *and* **ECONOMICAL**

Sunbird Mouldboard Plough

An easy-to-handle plough of great strength, very light draught, and extraordinary clearance for orchards, vineyards, etc. The 19-inch well-shaped mouldboard ploughs 8 inches wide and up to 6 inches deep, turns a good sod, buries manurial growth effectively, and cleans easily. Powerful independent levers regulate, set and depth perfectly, and are down when plough is at work, to clear low branches, etc. Wide range of draught adjustment—vertical and horizontal—and triangular draught-chain pull ensure control to hold plough to its work, and facilitate work close to trees, etc., without discomfort to user or team.

2-furrow, without coulters £11/15/-.
3-furrow, without coulters £16/10/-.

Knife and circular coulters at small extra cost.

Ask for **Sunbird Booklet**—free on request—for full details.

Sunreach 5-Disc Cultivator

A time-and-labour-saving cultivator in orchards, vineyards, etc., which enables the user to cultivate under branches, close up to the trunks, thereby reducing hand cultivation and weeding to the minimum. The easily-operated four-coulter control is set well to the rear of the cultivating discs, giving the greatest control, holds discs to their work, guides them at will close to and around the trunks, is adjustable for tilt where land is banked up, and each end-coulter is equipped to prevent sinking in soft ground. The five 16-inch discs are six inches apart, can be quickly reversed for in-throw or out-throw, and are adjustable for breast cut by a lever in horizontal position to be clear of branches, etc.

With extension frame and extended bridle, for orchards . . . £15
Without extensions, for vineyards £14/5/-

Fruit shield over discs at small extra cost. Ask for the **Sunreach Folder** for full details.

——::O::——

Prices are for delivery at Sunshine. Discount for cash, 2½ per cent., or liberal extended terms can be quoted. Ask the local agent, or write for the new descriptive general catalogue and complete price list—free and post free.

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CITRUS NOTES

The New Zealand Embargo

N.S.W. Made the Victim

Fruitgrowers' Federation Complains

We have received the following letter from Mr. L. T. Pearce, market representative of the Fruit Growers' Federation of New South Wales, under date of January 6, 1937:—

"The claim that the New Zealand embargo on Australian fruit and vegetables was virtually an embargo on N.S.W. produce only is confirmed upon consideration of the history of the case.

"The New Zealand Order in Council, prohibiting the importation of Australian produce was passed on December 15, 1932, but, by August of the following year, the ban had been lifted in favor of Oranges from South Australia only. As a result export of Oranges from that State, which previously had been inconsiderable, gradually increased so that by 1936 140,000 cases were exported to the Dominion in that year.

"A similar position existed in relation to Pineapples, which fruit is almost entirely grown in Queensland. The export trade in this fruit was worth £5,000 to £6,000 per annum, and in 1931-32, the year prior to the embargo, 8,581 centals were exported. Due to the embargo this quantity was reduced in 1932-33 to 5,179 centals, but when lifted during the same year the quantity increased so rapidly that by 1934-35, 12,353 centals were exported. The embargo, however, still continued to operate against the fruits of New South Wales, and, although Pineapples were re-admitted owing to their being free of fruit fly, the same consideration was not extended to the fruits of New South Wales, which are scientifically known to be free of that pest. Cherries, Grapes, Passion Fruit, Cucumbers and various types of vegetable had been exported to New Zealand from this State to the amount of more than £20,000 per annum, and it is difficult to understand that the embargo was permitted to continue to operate against these fly-free fruits.

"The fruitgrowers of New South Wales, however, are aware of the inequitable application of the embargo, and find it difficult to accept without complaint. Furthermore, it appears to many that the true spirit of Federation under which the various States of the Commonwealth operate is not being observed when one State and one section of the State is being victimised in this manner."

Teacher: "Use the word 'combine' in a sentence."

Boy: "If you're going to town Saturday, come by'n I'll go with you."

Cables—Monro, London Codes—A.B.C. 5th Edition and Bentley's

GEO. MONRO Ltd.

The Most Important Fruit-Distributing Organisation in the World.

COVENT GARDEN MARKET, LONDON, and SMITHFIELD MARKET, MANCHESTER

Other Branches: BIRMINGHAM, GLASGOW, WORTHING, SPALDING and HULL

Sales on Commission, by Private Treaty only.

Over sixty years' of Fruit Distribution.

We do not purchase.

Our Sale Rooms are the largest and most up-to-date in England; consignments are therefore displayed to the best advantage, consequently, our returns are the best.

We have specialised in the Sale of Australian Apples and Pears by expert salesmen for many years past, and we have the largest and best customers in Great Britain amongst our clients.

Bigger and better business is our objective.

We make advances to cover cost of freight, etc.

(Established 1862)

DIRECTORS:

Major Edwin G. Monro, O.B.E. (Chairman), Geo. Monro, C.B.E., Bert J. Monro, Captain J. Stuart Monro, Alex. J. Monro, and C. Cole.

Chief Agent in Aust.—Major H. Dakin, V.D., Goldsbrough House, Macquarie Place, Sydney, N.S.W.

Victorian Representative .. .. .. Esmond Russell Pty. Ltd., 395 Collins St., Melbourne.
Southern Tasmanian Representative W. H. Ikin & Son, Dunn Street, Hobart.
Northern Tasmanian Representative Bell & Gerrard, No. 200 Cimitiere St., Launceston.
West Australian Representative . .. The Westralian Farmers Ltd., Perth.

Citrus Crops in N.S.W.

Navels Light, Valencias Fair.

THERE WAS A HEAVY SETTING of Washington Navels on the Murrumbidgee Irrigation Areas, states the N.S.W. Department of Agriculture, but subsequent shedding reduced the crop considerably, and only light to medium yields are likely to be forthcoming. Valencias generally are better than navels, and are said to have moderate to good prospects, while Lemons and Mandarins appear to be in a similar position.

The majority of Navels have fallen in the **Kenthurst-Glenorie** area, and a crop failure is indicated. It is yet too early to estimate Valencias, although only a light yield is looked for. A patchy crop of Commons, ranging from light to medium, is expected while Sevilles appear likely to fail. Profuse bloom is showing on the latter trees at the moment. Main crop Lemons are inclined to shed. Trees are blooming freely, and a heavy second setting is anticipated. A moderate crop of Mandarins is in prospect, and further flowering is about to commence.

An extremely light crop of Navels is in sight at Kurrajong. Fair to medium settings of Sevilles are showing, while Mandarins are moderate to good. Practically all Orange trees are carrying heavy intermediate bloom.

Shedding of main crop Navels, other Oranges and Mandarins is taking place in Hawkesbury River groves.

SULPHATE OF AMMONIA.

Record Sales in 1936.

Sales of the nitrogenous fertiliser sulphate of ammonia, reached record proportions in Australia during 1936, being 33 per cent. higher than in 1935. It is stated that the increase has been due to the greater realisation of the value of this fertiliser by orchardists and market gardeners and to the development of its use with superphosphate, as a mixed fertiliser, for cultivated farm crops, such as Potatoes, fodder crops, Oats, Barley, etc. Figures for Victoria show that demand has doubled since 1931, and that sulphate of ammonia is now a staple fertiliser in the vinegrowing area on the River Murray.

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Orchards & Nurseries 208 Acres
Private Cool Stores, 17,500 Case Capacity.
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N.S.W. Citrus Growers Defence Association

A well attended meeting of the executive of the Citrusgrowers' Defence Association was held at Hornsby on January 16, 1937, at 2 p.m. There were present: Mr. W. J. Black (in the chair), Messrs. V. S. Fagan (Lisarow), R. Roughley (Middle Dural), A. C. Waddell (Arcadia), G. B. Brown, J. D. Turnbull, W. J. Tuckerman, E. Mitchell (Ebenezer), A. W. Best (Mangrove Mountain), W. Schwebel (Glenorie), J. Ward (Griffith), C. Kaiser, G. J. Mitchell (Sackville North), A. Ghersi (Wamberal), F. Bryant (Mangrove Mountain), and R. H. Best, Jnr. (Glenorie).

A hearty welcome was accorded Mr. Ward from Griffith.

Citrus Advisory Council: Discussion took place on correspondence from the Department of Commerce regarding appointments to represent N.S.W. on the Citrus Advisory Council. The Department had asked if the Association is prepared to support the Council in its work and objects should the Association secure representation on the Council.

Mr. W. J. Black contended that the Council could not represent the citrus growers of N.S.W. except through the Association nominees, the Association consisting of the growers covering the largest area under citrus fruits in the State. The Association would naturally give its loyal and strong support to the Council in its endeavor to improve the citrus-growing industry. The Association believes in co-operation, but is opposed to bureaucratic control. Mr. F. Bryant stated that the nominations submitted to the Minister, namely Messrs. W. J. Black, J. A. Ward and C. Kaiser, were successful growers with considerable experience of the industry and would be of valuable assistance to the Citrus Advisory Council.

Orchard Tax: As the State Government had not submitted to growers a poll as to the rescission of the orchard tax, it was resolved that branches should take up this matter with local members of Parliament, and that the Secretary should see the Premier on this matter, also consult the U.A.P. and arrange a deputation on this matter.

The Referendum: A manifesto was prepared setting out the reason for opposing the amendment to the Constitution. Funds were subscribed towards securing a "No" vote.

Fruitgrowing Zones: Attention was drawn to the proposals of the Department of Commerce for dividing fruitgrowing districts into zones: (A) for export, and (B) for local consumption.

Great difficulties were forecast by many speakers in effecting such zoning as the suitability of fruit for export varies in every district. One district could produce different types of fruit according to aspect, altitude and soil. It was decided to take no action as it was assumed that such a far-reaching proposal would be submitted by the Department of Commerce to the newly-constituted Citrus Advisory Council before action was taken to zone the citrus industry.

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LEMONS, ORANGES, GRAPEFRUIT, PEARS, PEACHES, APRICOTS, BERRIES, CHERRIES.
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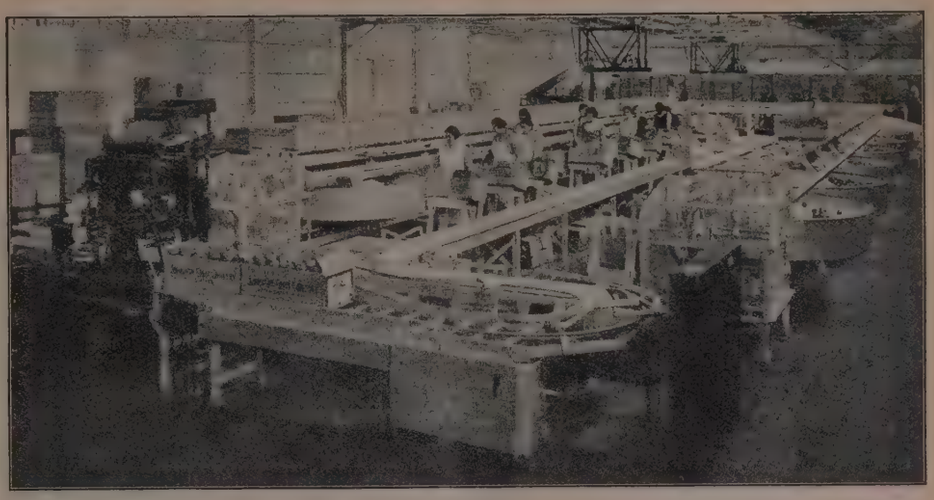

A Californian Citrus Processing Plant.

Alternate Cropping of Valencia Oranges

The investigation of the objectionable cropping of the Valencia Orange is being carried out by the C.S.I.R. On the Murrumbidgee Irrigation Areas the Valencia Orange tree bears heavy and light crops alternately. The fruit of the heavy crop is inclined to be undersized and that of the light crop overlarge and coarse.

It has been found that partial removal of the newly set crop during the heavy crop year increased the setting and crop the following year. The heavier and the earlier the thinning, the greater the effect.

The removal of the fruit as late as August will influence the blossoming and setting that occurs a few weeks later. The removal of part of the crop in January (just after setting) has only a small effect on the ultimate size of the remaining fruit. This suggests that the small size of the fruit of the heavy crop year is largely due to the heavy blossoming, and only to a small extent due to the maturing of the heavy crop.

The investigations are being continued and include studies concerning the effect of time of application of nitrogenous fertilizer.

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Cover Crops.

Tickbeans are recommended for green manuring of citrus groves, see special article in this issue.

CITRUS JOBS TO DO.

As Autumn draws near, there are some plans that should be put into practice on the citrus orchard, says L. Paynter, Orchard Instructor, in the "N.Z. Journal of Agriculture."

"In those districts where exceptionally dry weather has been experienced this Summer, growers of citrus fruit will need to keep their land in a constant state of cultivation, so that the surface soil is in as fine a tilth as is possible. Where mulching has been carried out either with rough litter or manure it will have helped to conserve moisture and keep down weed growth. In some groves irrigation could be employed with advantage, although as a rule it is not necessary; but it is worth the effort to supply water if by doing so one can save defoliation and loss of the crop.

As soon as Autumn rains commence the trees put forth an amount of vigorous growth, and this should be "pinched" and spaced in order that the growth may become reasonably hard to withstand the frosts which may be expected with the coming of the Winter.

WHY NOT LET THEM?

The office of the Producers' Co-operative Distributing Society Ltd., in the Sydney Municipal Markets, has long been recognised as a gathering place for people prominently associated with the fruit trade, but it has seldom been Mr. J. W. Blick's lot to entertain, without any prior arrangement, such a galaxy of talent from areas widely apart as was in his office at the one time on Tuesday morning, January 12. Those present were:—

R. Mallinson, manager, Griffith Producers' Co-op. Co. Ltd.

W. W. Chellis, manager, Gosford Co-op. Citrus Packing House Ltd., and K. C. S. Packing Shed, Kentucky South.

T. Murray, manager, Wyong Co-op. Citrus Packing House Ltd., and Maimuru Packing Shed, Maimuru.

H. G. Such, first manager of Griffith Producers' Co-op. Co. Ltd., and late manager of N.S.W. Central Citrus Association.

D. D. Walters, manager, Murrabit Packing Co. Ltd.. Victoria.

C. Neville, Baillie Neville & Co. Ltd., Greymouth, New Zealand.

H. Perkins, Perkins Bros. Ltd., Auckland, New Zealand.

A. W. Blick, acting manager of P.D S. Fruit Section during Mr. J. W Blick's absence in United Kingdom last year.

Among such a collection of representative men associated with the citrus industry, one can well understand the bad time Australian Potato growers generally and the Federal Government in particular, had, and if it had been left to a vote of those present, the controversy between Australia and New Zealand re embargoes on Potatoes and citrus fruit respectively, would have been ended in short order.

A bookmaker has been fined one hundred pounds. Dear me! Just for trying to do his fellow man a good turn, says you.

COLD STORAGE OF CITRUS FRUITS.

The citrus preservation work being carried out at Griffith by the C.S.I.R., forms part of the extensive investigations conducted at different centres by the Council, in co-operation with State authorities. The station's investigations deal mainly with the effect of orchard environmental factors on the keeping qualities of Oranges, and the variation in the keeping qualities due to environmental conditions.

Previous work has shown that the keeping qualities of Oranges vary from farm to farm, and it is important to determine the relative influence of the large numbers of orchard factors concerned. The effect of different methods of green manuring and different irrigation practices are being studied. Such factors as time of picking, method of picking, and processing methods are also receiving attention.

ORCHARD PLOUGHS.

Mr. C. Hillman, now one of the principals of the firm of Messrs. Hillman and Keogh, whose advertisement appears elsewhere in this issue, will be remembered by many orchardists in the Doncaster and surrounding districts of Victoria as the original manufacturer of the orchard shifting handle plough, disc ploughs and extension discs. He first commenced manufacturing orchard implements generally in 1887 at Doncaster, and these "Hillman" implements have been used in all States of the Commonwealth since that date.

Messrs. Hillman & Keogh's works are situated at Shipley-street, Box Hill, Victoria, where a new and recently improved double furrow orchard strip plough is being manufactured. Mr. Hillman would welcome enquiries from all past and present clients.

ROYAL AGRICULTURAL SOCIETY
— OF NEW SOUTH WALES —
Royal Easter Show
MOORE PARK, SYDNEY.
22nd to 31st March, 1937
NINE DAYS — SIX NIGHTS
Entries for Fruit Sections Close February 19.
Schedules and Entry Forms on Application.
G. C. SOMERVILLE, Secretary
Endeavour House, 33 Macquarie Place, Sydney

Mr. T. J. McKINLEY
(Tasmanian State Fruit Board)

Reported Nov. 1936—

MANCHESTER

Has Been Neglected

"Of all the ports I visited Manchester probably has the best facilities for handling perishable products . . . . . .

The system of handling and delivering fruit to the buyers was all that could have been desired"

Direct Shipment

. . to . .

Manchester Docks

Cuts out intermediate commissions, multiple handling and excessive transport charges and ensures a favorable market and maximum returns.

For further particulars and names of reliable brokers or private treaty salesmen at Manchester.

Apply to

Capt. W. J. Wade
8 Bridge St., Sydney

Cables and Telegrams:—
"PORTOMAN," Sydney

Notes from N.S.W.

SYDNEY ROYAL SHOW.

The Easter show of the Royal Agricultural Society of N.S.W. will be held at Moore Park, Sydney, from March 22 to 31. Entries for the fruit sections close on Friday, February 19. In commemoration of the accession of King George VI. to the throne, the Society will award a bronze medal to the most successful exhibitor in the fruit section.

These classes are open only to bona fide owners of registered orchards or vineyards comprising not less than one-quarter acre.

Fresh fruit will be received up to 9 a.m. on Tuesday, March 23.

Exhibitors will be allowed **one entry only of any one variety in** each class.

No padding (Woodwool, paper, shavings, etc.), to be exposed on the face of the exhibits in staging pyramid exhibits, but some covering to the exposed woodwork will be allowed. Such covering or other embellishment to be as little as possible, but consistent with a good spectacular effect.

All exhibits to be the property of and grown by the exhibitor.

All exhibits must be consigned to the Secretary, Royal Agricultural Society of N.S.W., at Darling Harbour.

District Collection of Apples.

Special prizes—£200. Collection to be staged in pyramid trophy form. A district to comprise an area embraced within 25 miles of any centre. All varieties (not more than 12) to be named; a card bearing name to be placed on Apples. £100 will be divided between first, second, and third prize winners—£45, £30, an £25 respectively. The first prize winner shall also be awarded His Majesty King George VI. commemorative bronze medal in addition to the Society's bronze medal. The remaining £100, provided there are five exhibitors in addition to the first, second and third, to be divided, viz.:—Fourth prize, £24; fifth, £22; sixth, £20; seventh, £18; eighth, £16. Should there be fewer than eight exhibitors in this class, the first, second, and third prize money as stated above will be paid, and the remaining surplus (£100) divided among all the exhibitors in the class in proportion to the number of points awarded by the judges.

Any exhibit that gains fewer than 60 points will not be eligible to participate in the above prize money.

In addition to the prize money, £20 for organising purposes will be paid to each competing district.

District Collection of Pears.

Special prizes—£50. Collection to be staged in pyramid trophy form. A district to comprise an area embraced within 25 miles of any centre. All varieties (not more than 12) to be named; a card bearing the name to be placed on Pears. £36 will be divided between first, second and third prize winners; £16, £12 and £8 respectively. The first prize winner shall also be awarded His Majesty King George VI. commemorative bronze medal, in addition to the Society's bronze medal. The remaining £14, provided there are three exhibitors in addition to the first, second, and third, to be divided, viz.:—Fourth, £7/10/-; fifth, £4/10/-; and sixth, £2. Should there be fewer than six exhibitors in this class, the first, second and third prize money, as stated above, will be paid, and the remaining surplus (£14) divided among all the exhibitors in the class in proportion to the number of points awarded by the judges.

Any exhibit gaining fewer than 60 points will not be eligible to participate in the above prize money.

FRUIT CROPS IN N.S.W.

IN A RECENT STATEMENT regarding fruit crops in N.S.W., the Department of Agriculture advised that there are good clean crops of Apples and Pears at **Batlow.**

On the **Northern Tableland** there is every indication of satisfactory yields of both Apples and Pears, pleasing development of all varieties being apparent.

It is expected that pome fruits in the **Crookwell** area will attain good size, and compensate to some extent for the otherwise mediocre crop. Granny Smith, Jonathan, and McIntosh Red are for the most part good, while Londons and Romes generally are light to poor. Tasma, moderate to good; Delicious are medium to poor. Other varieties are variable and mostly light. Williams Pears, medium to good; Packhams, Winter Cole and Winter Nelis, fair. Beurre Bosc, generally light.

Murrumbidgee Irrigation Area.

Jon., Del. and Cleo. are good to heavy at Griffith. There are some good crops of Granny Smith, but the average setting is light. Apparently a heavier crop than was at first anticipated is showing at Leeton.

Pears, medium to good.

Citrus.

See "Citrus Page" for report.

Bananas.

Crops were showing excellent growth on the **Lower Tweed,** but only light consignments in January.

Dry weather occasioned heavy losses of fruit in the **Murwillumbah** district early in December, and flying foxes also caused considerable damage. The rains received late in the month, however, greatly benefited plantations and good consignments are expected.

At **Lismore,** the hot, dry conditions prevailing early caused some wilting of plants, and a further 20 acres were destroyed by bush fires. The recent splendid rains, however, greatly benefited crops, and very fine quality fruit is now showing on the best plantations. Slight falling of fruit is reported, but generally prospects are favourable for good marketing.

ORCHARD REGISTRATION IN N.S.W.

To Be Effected by February 28.

The Minister for Agriculture (Mr. Hugh Main) stated recently that registration of orchards and nurseries as required by the Plant Diseases Act, 1924, became due on January 1, and should be effected by February 28, 1937.

He pointed out that last year the department was compelled to prosecute a number of growers for failure to register, the maximum penalty provided being £50. All persons who were either owners or occupiers of orchards and nurseries should therefore see that registration was effected before February 28 next.

Orchards of less than one-quarter of an acre which did not contain Banana, Plantain, or Manila hemp plant were exempt from registration.

The registration fee, which was computed at the rate of 1/- per acre or portion thereof, might be forwarded either to the Under-Secretary, Department of Agriculture, Box 36A, G.P.O., Sydney, or to the nearest clerk of petty sessions. Registration forms and other particulars might be obtained on application to the department.

THE MARKET GROWER

OFFICIAL ORGAN OF THE MARKET GARDENERS AND FRUITGROWERS' SOCIETY OF VICTORIA.
ALSO OFFICIAL ORGAN OF THE KOONDROOK & BARHAM TOMATO GROWERS' ASSOCIATION.

Vegetable Culture in Tasmania

IMPORTANCE OF HUMUS — VARIETIES TO SOW — MAINTAINING THE SOIL. —

Varieties to Sow.

Vegetable crops planted for Winter use will require every attention during the next few weeks when the weather is normally hot and dry. The plants should be kept growing by regular watering, followed by hoeing to keep the weeds down. Where plants are not making satisfactory growth a light dressing of sulphate of ammonia hoed in as soon as the soil is dry enough after watering will usually stimulate growth.

Cabbage and **Cauliflowers** for use in the Spring should be sown in a seed-bed that has been well prepared, but it is not advisable to force the young plants. These are best when grown steadily in the seed-bed. Any forcing that is to be done should be after they are planted into the permanent beds. When ready for transplanting, this crop should be set out in a sunny position where drainage is particularly good so that growth will be maintained throughout the Winter months.

Spinach is one of the vegetables with a high iron content and is said to possess particularly valuable health-giving properties. In this State it is not extensively grown, but it does well either as a Spring or Autumn sown crop. There are two varieties. That known as "prickly" Spinach is best for Autumn and Winter sowing, while the "round" Spinach is favored for Spring and Summer use. They are both easily grown provided a piece of really rich ground is available. The seed of the prickly variety can be sown at intervals of three or four weeks from now on until the Winter. Sow in drills twelve to eighteen inches apart, and thin the plants to a distance of eight or ten inches. Under favorable conditions Autumn-sown Spinach will be ready for use in approximately two months from sowing.

In most homes early **Spring Onions** are in demand for salad making. For this purpose one of the white varieties or Silverskins, which are earlier and milder in flavor than the Brown Spanish types, are generally favored. If a sowing of these is made at the end of March or early April they will withstand the Winter frosts and be ready for use early in the Spring. A friable soil fairly free from weeds is best, and the seed may be sown in rows or broadcast in a seed-bed. The former method is generally best, as it allows for weeding. If sown in rows the plants may be thinned out as required for salads or planting, and the remainder allowed to grow to maturity. It should be remembered, however, that Silverskin Onions are not good keepers, and for that reason cannot take the place of the Brown Spanish types for a main crop.

The main crop of Onions will shortly be ready for harvesting, and the matter of storage is worth consideration. The keeping quality of the crop depends largely on the methods of handling and conditions of storage.

When the foliage and stems begin to flag it is a sign that they have performed their part as regards the growth of the plant, and if the weather is dry the bulbs should be pulled immediately. It is not advisable to pull the Onion crop during wet weather, but whatever the state of the weather they should be pulled before second growth commences. After being pulled, the Onions should be left lying in the open, preferably on a hard surface, where the roots and tops will be withered by the sun. If turned over once or twice the proces of drying will be considerably hastened. When the roots and tops are completely withered the greater portion of the latter should be taken off and the bulbs are ready to store. No attempt should be made to store Onions with thick necks or those that are deformed, but sound bulbs that have not been bruised and with roots and tops properly dried when stored in a cool, dry place, have good keeping qualities.

The old-fashioned method of stringing and hanging up is still the best way of keeping moderate quantities. A false ceiling of wire netting, in an open shed, over which the bulbs may be spread is also satisfactory. Whatever method is employed, every attempt should be made to avoid close stacking and to make ample provision for free circulation of air through stored Onions.

Carrots for the earliest crop should be sown at the beginnig of April. The short-rooted sorts are best for early sowing.

To Maintain the Soil

in a really productive condition with the minimum expenditure is perhaps the most difficult problem facing the vegetable grower. Gardens are usually confined to a small space and the removal of plant food by continuous cropping results in the loss of fertility and the soil soon becomes impoverished and unable to produce reasonably good crops unless provision is made to keep up fertility.

The plant foods, nitrogen, phosphoric acid and potash, usually applied in the form of artificial fertilisers, are most important, for any one or possibly all three of the plant foods mentioned are not usually present in sufficient quantities to raise the maximum crop. To apply fertilisers containing these plant foods to the soil is a comparatively simple and inexpensive matter, but it is sometimes overlooked by the home gardener that these three elements alone are not all that a garden soil is likely to require.

The importance of humus cannot be overstressed. Humus is the decayed or decaying vegetable matter in the soil, and no amount of artificial fertiliser can take the place of humus once supplies of the latter are depleted. The depletion of humus naturally follows cultivation. Virgin soil on which plants or trees have been growing, dying and decaying for many years is well supplied, and when such ground is cleared and brought under cultivation heavy crops are usual even without the aid of artificial fertilisers. But, as often happens, if crops are grown and harvested off such land continuously for a few years and no provision made to replenish the humus, the fertility of the soil is impaired, and sooner or later it will become difficult, or impossible, to grow a payable crop even with the aid of artificial manures.

The actual functions of humus in relation to soil and fertility are many, but some of the most important are the retention of soil moisture and better aeration of soil. Humus also improves the texture, and therefore renders it much easier to work the soil up to a good tilth. It furnishes the media for the growth of soil bacteria, without which many nitrogenous substances would never be reduced to a form assimilable by plants, and it supplies acids that perform important functions in relation to plant foods of mineral origin. For centuries farmyard manure has been applied to the land, not only because it contains the essential plant foods, but because it also supplies humus. Where farmyard manure is available in sufficient quantities there is no better method of supplying humus, but owing to the development of motor transport, stable manure has become scarce, and as a result vegetable gardens have suffered.

In places where stable manure was at one time available but is now scarce, gardeners are often reluctant to adopt new methods of supplying humus, but it is inevitable that sooner or later they will be compelled to do so, and the most satisfactory alternative to stable manure is undoubtedly green manure.

A crop of some quick-maturing plant is grown, and before it reaches maturity it is dug into the soil with the object of enriching it in organic material. The crop should be a quick-growing one so that it will not occupy the ground too long, and at the same time it should give a bulky growth of greenstuff that will decay rapidly when buried. Leguminous crops such as Peas, Beans, Lupins and Clovers are of special value as green manure, for, although they take a little longer to grow, they use up and hold soil nitrates which are otherwise liable to leach out of the soil. At the same time they also accumulate nitrogen that has been taken from the air and "fixed" by bacteria contained in the root nodules. Over and above increasing the nitrogen supply legumes generally are deeper-rooting than most of the non-legumes, a feature beneficial to most soils.

Among the non-legumes suitable for green manure, Oats, Mustard and Rape may be mentioned. A mixture of Oats and Horse-beans has proved to be particularly suitable to Tasmanian conditions using a mixture of two by weight of Horsebeans to one of Oats, or Grey Peas may be used in place of the Beans.

It is worth any gardener's while to go to some little trouble to find out which of the crops mentioned best suits his particular soil, or to practice a rotation of several of them.

Green crops are sown in the late Summer and Autumn as the vegetables are removed and the ground becomes vacant. If sufficient moisture is present, February is not too early to sow, but time of sowing will vary from year to year in accordance with the rainfall, as unless the crop can be watered it is a mistake to sow before the ground is moist enough to ensure growth.

Green crops may be sown until April with good prospects of success, excepting Rape and Mustard, which if they are to do well should be well advanced before the frosts arrive.

Manuring of a green crop is generally necessary, and any of the leguminous crops in particular will benefit greatly by a liberal dressing of superphosphate at the time of sowing.

The correct time to dig in a green crop, say, of Peas or Beans, is when the maximum of green growth has been made but before seed formation has commenced. When dug in at that stage the crop is in a succulent condition, and, given normal weather conditions, will decay in a few weeks.—H. A. Turner, in Tasmanian "Journal of Agriculture."

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BEAN SEED PRODUCTION.

Promising Industry in N.S.W.

SEED BEANS are now being produced in the coastal areas of N.S.W., under the pure seed certification system operated by the N.S.W. Dept. of Agriculture. The supply of recommended seed, however has not been equal to the demand. Mr. A. C. Orman, agricultural instructor, estimated that last season the central coast alone would absorb 1,000 bushels of the seed, but only 200 bushels were available.

Last season some growers received as high as £5 a bushel for their seed, states Mr. Orman, but such a high figure could not always be expected, the average price being between £3/10/- and £4 a bushel.

Yields usually ranged from 10 to 25 bushels to the acre, under inland conditions, where, with irrigation, the best quality seed, with regard to freedom from disease, was grown.

It had been found that the crop should be sown as late as possible. The seed was planted widely apart, and the plants must be frequently inspected during growth for the presence of disease. **Tweed and Canadian Wonder** varieties were the most suitable types for the trade, but some attention was also being given to the **Premier (Brown Beauty)** variety.

AT LAST!!! A Safe and Efficient Non-Poisonous Insecticide for Dry Dusting.

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Victorian Distributor—F. R. MELLOR, 440 Elizabeth Street, Melbourne.

RHUBARB GROWING

Experiences in Queensland.

RHUBARB is indigenous to eastern Asia. It belongs to the buckwheat family, Polygonacae, and is a highly popular herbaceous perennial. The succulent stems are used for sauce, in pies, and take the place of stewed fruit in many dessert courses.

Climatic Requirements.

Temperate to subtropical. Occasional frosts during the Winter do not damage the rooting system.

Soil.

Deep, rich sandy loams provide ideal conditions for Rhubarb, which, however, may be grown successfully on all types of soil, once such soil has been properly conditioned.

The large succulent stems require an enormous amount of soil moisture, so that irrigation is especially valuable for this crop.

The earliest marketings usually command best prices, and warm soils gently sloping to the east, are desirable when earliness is such an important factor.

Propagation.

The plants are readily propagated from seed sown under cover or in the open, but as only a small percentage of the plants produced in this way are true to type, the system should not be generally practised. Root division is the method ordinarily employed, and a piece of root containing a strong eye will grow, and under favorable conditions produce a good plant in one season.

In the colder districts gardeners often force a crop by lifting the roots from an old bed during the late Autumn, planting good eyes in hot beds or under specially constructed cover, forcing throughout the Winter and planting these well-established plants in the Spring.

Planting.

Spring planting is always preferable, and as early as possible, for the plants need the entire growing season for their full development. The usual distances for planting are 3 ft. x 3 ft. or 4 ft. x 3 ft. apart, and the roots are covered with several inches of soil.

Wilson's Ruby, Sydney Crimson, and Victoria Giant are excellent varieties.

Fertilising.

When fertilising Rhubarb, the grower should consider the following facts:—(1) the plant luxuriates in soils abounding in vegetable matter (humus); (2) large stalks usualy count for better prices; (3) the earliest pullings are in most demand; (4) the crop of any given year depends largely upon the care of the plants during the preceding year.

Stable manure is especially valuable because it supplies humus, conserves moisture, and furnishes plant food. Some growers use up to 25 tons of stable manure per acre, and the general opinion seems to point to Autumn being the best time for application. Fertiliser made up on a 6:10:10 formula and applied at the rate of 1,000 lb. per acre is recommended.

With proper care plantations will produce for a number of years, but it is a mistake to maintain them once the stalks become materially smaller. It is doubtful if the best profits can be realised in plantings over four years old.

Cultivation.

Thorough tillage throughout the season is highly important. Enormous quantities of water are used by the large leaves and succulent stems, and conservation of moisture is urgent.

At the first operation in Spring the mulch of manure should be worked into the soil. Subsequent tillage should be frequent, but not too deep. Some hand weeding is necessary to keep the fields entirely free from weeds. The seed stalks, which generally appear on a small percentage of the plants, should be broken off.

Marketing.

Harvesting begins as soon as the stalks have attained a length sufficient to satisfy the market concerned. The largest stalks are pulled, no attention being paid to the smaller ones, although the smaller ones are far more tender for midsummer use. The second and third year usually provide the heaviest harvest, and harvesting in any year should not continue until the plants are largely exhausted. Rhubarb is essentially a late Spring and early Summer crop.

Ordinarily the season of marketing lasts from two to three months. From two to eight stalks are tied in a bunch, and the use of either blue or red tape for tying adds to the attractiveness of the product. The leaves of this plant are definitely not edible.—By H. J. Freeman, Senior Instructor in Fruit Culture, in the "Queensland Agricultural Journal."

SWEDE TURNIPS.

Sound Versus Brown Heart.

The New Zealand Department of Agriculture reports experiments conducted with Swede Turnips to determine the action of borax in the control of brown-heart. Samples of sound Swedes and those affected with brown-heart were treated identically in the laboratory to discover the relative constituents of dry matter and sugar content. Six districts were used in the tests, and the average over all six showed the following records:—

Sound Swedes.—Dry matter 10.1 per cent., sugar 5.8 per cent.

Brown-Heart Infected.—Dry matter 9.6 per cent., sugar 4.7 per cent.

Some of the districts showed greater sugar content than the average, in both cases, but the sound samples in every case eclipsed those from brown-heart infected Swedes.

867,100 TONS OF ONIONS.

Average Yield 194 Cwt. Per Acre.

According to the U.S. Department of Agriculture, 1936 production of Onions approximated 867,100 tons for the country, compared with 727,300 tons in 1935, and 662,350 tons average for the past 5 years. The price returned to growers, however, was little more than half that received in 1935, the average return being:—1936, 3/2; 1935, 5/1; and average for 5 years 5/0½.

The yield per acre was also higher in 1936, when 9 tons 14 cwt. was the average, as against 7 tons 18 cwt. in 1935 and 8 tons 5 cwt. average for the previous 5 years. The acreage under Onions in 1936 was 54,137 acres.

Pumpkins Not £180 per ton

Department's Disclaimer.

The Commonwealth Department of Commerce draws attention, in its November Trade Bulletin, to a false report which appeared in the daily press recently, in these words.

Gold Mines from Pumpkins.

Radio and newspaper suggestions of a fabulously profitable market for Pumpkins in China have been queried by Australian farmers in recent correspondence with the Department of Commerce. Prices mentioned of up to about £180 per ton seemed to indicate a new method of speeding up the millenium, but a report to hand from the Australian Trade Commissioner in China has quickly dispelled this optimistic feeling .

Mr. Bowden states that large quantities of Pumpkins are grown in China, and are sold at a wholesale price of approximately 45/- per ton. In the class of shops patronised by foreigners, Pumpkins are retailed at about 4 Shanghai cents per lb. (i.e., less than ¾d. per lb., or about £6/16/- per ton, Australian currency), but Chinese consumers are able to procure supplies at lower rates.

Fruit and vegetable importers state that it is not possible for foreign supplies to compete with the locally-grown product, and, in fact, it may be remarked generally that imported vegetables are in the luxury class, having only a relatively small demand from consumers (mostly Europeans), who are prepared to pay the high prices asked.

Mr. Bowden thought that some confusion might have arisen between the prices of fresh Pumpkins and tinned Pumpkins, but even the latter are not unduly expensive. Del Monte brand and Libby's brand from U.S.A. are sold in the best shops at about 60 cents per No. 2½ tin, which is equal to approximately 9d. Australian currency per 30-oz. tin, but the amount of business done is very limited.

It would thus be impracticable for Australia to enter this market, and farmers would appear to be as well off in growing Cucumbers for the extraction of sunbeams for Laputa as in growing Pumpkins as potential gold mines for China.

ONIONS IN 10 LB. BAGS.

Said to be Popular.

A recent report from Michigan, U.S.A., states that the experiment of packing Onions in 10-lb. sacks has "taken on" and has been received with great satisfaction. It caters for small restaurants and for large households, and it is predicted that the swing to this size will become a permanent institution.

Maintain Australian Economic Conditions

VOTE "YES"

A "Yes" Vote will not make any CHANGE in the Method of Marketing Primary Products and will Permit the Continuation of the System which has Existed for many Years, but which is Now Endangered by the Privy Council Decision in the James Case.

If the Primary Industries are injured, the evil consequences will extend also to our Secondary Industries.

THE ISSUE IS VITAL TO EVERY AUSTRALIAN

Authorised by H. SEELEY, W. CREMOR } Joint Secretaries, 435 Collins St., Melbourne.

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The Retail Fruit Trade

Secretary of the Melbourne and Metropolitan Retail Fruiterers' Association (Mr. E. W. Thompson) sends the following information:—

SATURDAY HALF HOLIDAY FOR FRUIT SHOPS.

OW THAT THE CLOSING of fruit and vegetable shops in the metropolitan area for the Winter months of the year, comcing on May 1, has been finally rmined, growers of all kinds of luce who have been disposing of r goods in the Victoria Market on urday mornings should seriously sider the advisability of altering market day to one earlier in the k. Retailers are confident that by uring the bulk of their requirets on Fridays, there will be no loss rade, and that they will easily be to satisfy their customers during day and Saturday morning with inconvenience to either side, and y of the shopkeepers state that r customers have told them they fer to have their orders delivered hem on Fridays during the Win- as tradesmen calling on Saturs very often delay them from get- away early to whatever pastime enjoy on that day.

Many growers have attended the ket on Tuesdays, Thursdays and urdays for considerable periods; have held certain stands for years those days, and possibly have alrs done good business on Saturs, but with the alteration it may very different, and as the majority retailers intend to cut out the urday market they may find the red conditions very unprofitable to end on that day, and it has been gested that before paying their rterly stallage fees for those quars between May and November, they sider the advisability of altering ir Saturday to some other day, as h all shops, market places, etc., sed on Saturday at 1 p.m., there l be very little business (wholesale) nsacted on that day. Friday's rket should then be the best of the ek, and growers would be well aded to book up their stand for that where possible. The Act applies all shops (except those in the city per), markets, and hawkers, so sibly Saturday's wholesale market l be the smallest of the week.

BROWN ROT IN SOFT FRUITS.

OWING TO THE UNUSUAL climatic conditions of late, all sections of the community—owers, shopkeepers, and the conners in common—have suffered verely from the ravages of the wn rot in most of the soft fruits s season, and it behoves every secn of the industry to do its utmost to p to check this disease.

No doubt most growers of soft fruit taking what they consider conentious measures to combat its tivities by spraying, etc., but this od work is very often nullified by king the fruit into boxes or other ntainers which are seldom or ever rilised to rid them of any spores the disease they may contain, the uit is then very often packed into cond-hand cases which may or may not have been used for the transit of previously diseased fruit, and so the disease is gradually being spread.

The retailer is not blameless, either, as the majority of them return old cases to growers regardless of what fruit they previously contained. To suggest the use of new cases would mean the cost would have to be passed on to the consumer, who in many instances can now only look on fruit as a luxury instead of a necessary food, and as the seasons each year of late appear to be getting more favorable for the spread of this disease, which is undoubtedly most contagious, it is encumbent on all parties to shoulder its responsibility, and do their share in assisting the Department of Agriculture, who are sparing no effort, to combat the spread of this disease.

Before placing new soft fruit in their windows or shops, retailers should thoroughly fumigate inside their windows and on the shelves where soft fruits have previously been, by so doing they will destroy any spores that may be left from any previous fruit which was there. Old and diseased fruit should not be left lying about, as the spores from them quickly spread over a considerable area.

The Department of Agriculture have the power to condemn all fruit showing any signs of this disease, whether in orchard, market-place or shop, and prosecute any person offering same for sale; this would mean heavy losses to all, and must be obviated as far as possible. Therefore, do your bit to assist others.

PROSECUTIONS.

Under the Vine Vegetation Diseases Act the Victorian Department of Agriculture continues to take action. During November two retail fruiterers were fined for selling Apples which were topped, and one city retailer was fined for selling Tomatoes topped.

In Mildura there was a prosecution with respect to red scale and failure to comply with the notice which had been served.

NEWS IN BRIEF.

For the export of Apples the State of New South Wales has been zoned into three sections—early, mid-season, and late. February 13 is the earliest date for shipping Cleopatras, Jonathans, McIntosh Red, Cox's, Londons and King Davids. No Granny Smiths will be exported before February 22, from even the earliest district.

Orchard registration must be effected in New South Wales by February 28. Registration fee is 1/- per acre. The maximum penalty for non-registration is £50.

Western Australian growers have decided as to their maturity dates for shipping Apples this season.

The Home Circle

APPLES AND THEIR USES.

THAT THE APPLE is the best fruit grown for household use was stated by Mrs. H. Reschke before the Coonawarra (S. Aust.) Branch of the Women's Section of the South Australian Agricultural Bureau. This was printed in the "South Australian Journal of Agriculture." The substance of Mrs. Reschke's paper on "Apples and Their Uses," is as follows:—

In a district where Apples are grown extensively and where there is often a good deal of waste fruit, the surplus fruit should be preserved. If this is done, it means that fruit will be available in Winter. Apples last for months when sound ones are stored in any cool, dry place in the home.

As good Apples possess valuable properties, their value cannot be over estimated. The careful housewife makes the best possible use of all Apples. She uses up first the ones that will not keep any length of time, taking care later on as the correct picking time comes, to pack and store away the good ones for later use.

The following are a few ways that Apples can be used in the home:—Pick up from under the trees the fruits as they fall; peel, core, and pulp them, and fill large Fowler's preserving bottles with the pulp. Place them in the steriliser, and sterilise in the usual way to vacuum the lids. This is very convenient for making pies and tarts during Winter. Apples and Quinces peeled, cored, mixed in bottles, and preserved are excellent for pies. Apple pie from the fresh fruit that would otherwise be wasted is also excellent.

Recipes.

Roly-Poly.—2 cups S.R. flour, 1 cup butter or dripping. Rub into flour, and mix with water. Roll out, and spread with the following:—3 Apples peeled and grated, ½ cup sugar, good ½ cup Sultanas, and a little chopped Lemon peel (preserved). Sprinkle well with cinnamon, and roll up and place in large pie dish. Dissolve ½ cup sugar and 2 tablespoons butter in 2 cups of boiling water, and pour over the roly-poly, and bake until brown.

Apple Ferguson.—2 ozs. butter, 3 cups breadcrumbs, 3 large Apples peeled and grated 1 cup each Sultanas and sugar, grated rind, and juice of 1 Lemon, ½ grated nutmeg, 3 eggs well beaten, then add 1 large teaspoon carb. soda. Method.—Rub butter into breadcrumbs, add other dry ingredients, lastly eggs and soda. Mix well, put in buttered basin, and steam 3 hours. Serve with whipped cream or custard sauce.

Useful when Apples are Scarce (Mrs. E. G. Allder).—Stew a few Apples. Make pastry, place Apples in dish on top of half the pastry, then add some Currants, Sultanas, and Raisins, and a little grated nutmeg, also a handful of coconut. Cover with pastry and bake.

Apple Pulp (Mrs. Len Redman).—Weigh as many pounds of Apples as required. Add 1 cup of water to every 1 lb. of Apples. Boil well without sugar, then put ½ lb. sugar to every 1 lb. of Apples and boil ½ hour. Put into jars, paste down as jam.

Dorset Pie (Mrs. W. L. Redman).—Nice hot or cold and economical. 1½ cups flour, ½ teaspoon salt, 1 teaspoon soda, 2 teaspoons cream of tartar. Sift these. Rub lightly in 1 tablespoon butter or dripping. Mix with milk to soft paste. Pat out to the thickness of ½ in. Put in large cake tin, and bring edge of pastry slightly up along edge of tin. Peel and core Apples, cut Apples in eighths, and press down in paste as thickly as possible. Sprinkle over ½ cup sugar and 1 teaspoon cinnamon. Cook in a moderate oven ½ hour.

SAVING THE TEETH.

Foods Containing Vitamins are Essential.

Apples are the Best Teeth Cleanser.

IN THE HEALTH column of the Melbourne "Herald," recently, appeared an article giving a conversation between a doctor and a patient; the patient complained of pains and the doctor recommended a thorough overhaul of the teeth, although outwardly they were sound. Continuing, the doctor stated to some extent the fate of the teeth of many of us is sealed before we are born, as the firmness and health of teeth and bones are laid in our ante-natal life. They depend on the food of the mother. Foods containing the required vitamins are in milk, butter and cheese. Cod liver oil is especially rich in the substances that make for good teeth and bones.

After birth, babies must have their fresh milk and vitamins. Cod liver oil is helpful.

Apple as Cleanser.

"Then, how about that Apple that's supposed to do such wonderful things to the teeth?" asked the patient.

"'An Apple a day keeps the dentist away,' is almost a justifiable modern version of the old saying," agreed doctor. **"The Apple is the finest mechanical cleanser of the teeth we have.** If every child chewed a small piece of Apple before going to bed for the night there would be far less dental decay in the world."

"We always used to have biscuits when we were kids," announced the patient.

"No wonder your teeth suffered," sniffed doctor. "Biscuits and sweets are just about the worst possible things to eat in bed. Have them for supper if you like, but they must be followed by a good cleaning of the teeth and, **even then, an Apple is advised to remove the bits the brush might slip over.**"

LONDON REPORT HOPEFUL.

As we go to press a report comes that cables from London indicate that the opening response to the new season's Australian canned fruit prices, which were recently announced, was very satisfactory. Owing to a reduction in Pear prices because of a heavy carry-over, the demand is particularly good.

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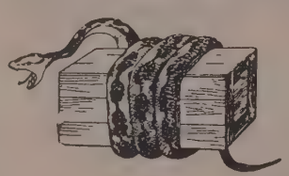

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The Victorian Fruit Marketing Association

THE monthly meeting of the Executive of the Victorian Fruit Marketing Association, was held at the Board Room, Commercial Travellers' Association, Melbourne, on Friday, January 8, 1937, at 11 a.m.

There were present Messrs. G. W. Brown (President), J. G. B. McDonald, M.L.A., W. H. Carne, A. S. Harrison, J. B. Mills, F. Moore, J. J. Tully, F. R. Mellor, W. Young, F. Cave, G. Douglas, W. A. Thiele, Esmond Russell, R. A. W. Bailey, K. Weeding, W. P. Hutchinson, J. M. Ward, Superintendent of Horticulture, and R. E. Boardman (Secretary).

Apologies were received from Messrs. J. W. Barker, K. Eagle, H. M. McLean, C. H. Jost, S. Brown, and G. H. Sprague.

Science Officers.

Letter received from Mr. J. G. B. McDonald, M.L.A., enclosing copy of letter from the Premier, Mr. Dunstan, in which it was stated that the Government was taking the necessary steps to retain the services of highly qualified scientific and technical officers of the department of Agriculture.

During recess the Government would carefully review the whole position, and if necessary, provide increased funds for the Department in order that its scientific and research work could be extended.

Letter also received from the Minister for Agriculture, Mr. Hogan, acknowledging the letter from the V.F.M.A. urging the strengthening of the staff of the Entomological and Plant Pathological section of the Department, and stating that the matter had been noted for consideration.

Mr. McDonald stated that he felt sure the Premier was going ahead with this matter. Further developments would be reported. Letters and report received.

Selling Fruit By Count.

Letter received from the Minister for Agriculture, Mr. Hogan, acknowledging our letter in which the request had been made for compulsory selling of Apples, Pears, and large fruits by count, and that this matter was under consideration. Letter received from Mr. J. G. B. McDonald, M.L.A., stating that this matter of selling large fruit by count instead of by weight would have his support, it being a necessary reform in our selling methods. Correspondence received.

Shippers' Levy.

On the motion of Messrs. Mellor and Cave it was decided that the Shippers' Levy for 1937 season be ½d.

Black Spot Research.

It was decided, on the motion of Messrs. Mellor and Cave, that £20 be sent to the Southern Fruitgrowers' Association as a contribution to the Black Spot and Russet experiments on Pears.

Vice-Presidents.

On the motion of Messrs. Hutchinson and Douglas, Mr. W. H. Carne was re-elected growers' Vice-President.

On the motion of Messrs. Mellor and Cave, Mr. Harrison was re-elected Shippers' Vice-President.

Pears for Export.

Mr. Brown reported that at the recent meeting of the Executive of the Apple and Pear Council, held at Sydney, the list of Pear varieties for export had been generally approved, the only alterations being that B. de Cap., B. Diel, and L'Inconnue had been placed on the list for export in 1937 only, and thereafter to be prohibited.

[Later. — The Department of Commerce has agreed to the Pear varieties Lemon Bergamot and P. Barry being exported for 1937,]

Apple and Pear Wrappers.

The Chairman reported that the Executive of the Apple and Pear Council in Sydney had recommended that all wraps for Apples and Pears for export should bear the word "Australia," or a typically Australian design. The reason was that at the present time the value of the publicity was lost because of the public being unable to identify the fruit as Australian. The approval was subject to enquiries as to costs being satisfactory; enquiries were also being made as to whether the added cost for printing on the wrappers could be borne by the U.K. publicity fund.

In reply to question, the Chairman said this would not apply to the 1937 season; further, where growers had their own brands on wraps, such could be continued provided the word "Australia" appeared thereon.

Agreement with New Zealand.

Mr. Mills reported that the Australian delegates had met the New Zealand Export Control Board and the representatives of the New Zealand Government. The previous percentages of 23½ per cent. New Zealand and 76½ per cent. Australia had been agreed to for this year only. He felt that the basis had to be reviewed as during the quota period New Zealand had only shipped an average of 20½ per cent.

The joint quantities for 1937 for Apples for U.K. agreed to were:—

Australia	3,750,000
New Zealand	1,150,000

This covered the whole season, February to June.

In the event of shortage, neither country could pick up the difference. This year, with figures definitely fixed, the U.K. market could be properly gauged.

Freight on Fruit.

The Chairman reported that the Executive of the Apple and Pear Council had waited on ship owners, seeking a reduction in freight of 6d. per case. There were some disturbing factors this year affecting shipments on O.S.R.A. vessels, which had brought about complications. However, every effort was being made to secure freight reduction. Other points referred to O.S.R.A. were undue length of voyage of ships last season, better handling needed in London, completely filling holds in one port, wilting of fruit through overventilation, uniform dunnage. Particular stress had been laid on the importance of knowing the due dates of arrivals at U.K. ports, and this information was being supplied.

Reduction of freight on fruit for the East was also sought by a deputation to the shipping lines concerned.

Report received.

Marketing Apples and Pears in Australia.

Mr. Moore reported that following the decisions of the Adelaide Conference, the Executive had adopted a programme for setting up an Australian Market Committee, complete with State Committees and a co-ordinating Committee. At this stage the committees would consist of growers or representatives of growers only, but members of the trade could be co-opted. This was undoubtedly the most important work before the Australian fresh fruit industry today.

An approach had been made to the Federal Government for authority to collect a small levy per case to finance

Apple and Pear publicity campgn in Australia.

The Chairman read the constitution the proposed Australian Market mmittee. It was decided to furnish h member of the Executive with opy of the constitution of the Auslian Market Committee.

Mr. Mills stated that pending the ion of the Government in granting power to raise the necessary ds, the Prime Minister had been ced to make a substantial grant to industry for publicity purposes.

It was decided after discussion that Chairman be asked to convene, early as possible, a conference of delegates from the following Asiations:—Victorian Fruit Market- Association, Cool Stores Associan, Northern Victoria Fruitgrowers' sociation, Southern Fruitgrowers' sociation. Three delegates from h Association.

Levy on Bought Fruit.

The Fruit Exporters Handling Comttee wrote in response to letter om V.F.M.A. re uniform levy on uit for export, stating it had been cided that buyers would uniformly arge the ½d. levy on bought fruit view of the fact that this levy was ed in advertising overseas and for e purpose of organising the inistry.

It was pointed out in the discuson that this was a statement of olicy and it would not effect existing ntracts.

It was decided on the motion of essrs. Douglas and Carne that the tter be received and the principle dorsed.

Dunnage in Ships' Holds.

The Chairman reported that a letter d been received by the Apple and ar Council from the C.S.I.R., re a rvey of performance of modern ips carrying foodstuffs under reigeration. The British Food Inestigation Board was sending officers New Zealand and Australia, and it as intended to investigate the disribution of temperature in refrigerated spaces with vertical circulation:—

(a) In a hold carrying a cargo of pples (without dunnage), and

(b) In a 'tween deck space carrying Apples (also without dunnage).

The ship would be the M.V. Port ackson, loading in Victoria and Tasnania in mid-April. The concurrence f the Apple and Pear Council was ought.

Mr. Mills pointed out that shipwners were responsible for the dunaging of ships and ships had their esponsibilities as common carriers. t would be a mistake to interfere in matter of policy. It was decided to ake no action other than to refer the natter to the Executive of the Apple nd Pear Council.

Correspondence.

Comprehensive report of 1936 seaon received from:—

F. W. Moore & Co. Ltd., London.—Laid on table for perusal.

Letter from Capt. W. J. Wade, re Port of Manchester.—Received.

Letter from Apple and Pear Council sending copy of Apple and Pear County Act.—Received.

Letter from Lightning Fruit Grader Co., giving details of their Apple washer.—Received.

Letter from N.S.W. Chamber of Fruit and Vegetable Industries, enclosing copy of minutes of meeting of Fruit Industry Consultative Committee, held in Adelaide last October, and notifying that the next meeting would be held in February, date to be advised later.—Received.

Duty on Rotenone Powders.

Letter received from Comptroller-General of Customs stating that both Derris and Cube Root imported in bulk and not cut, crushed or powdered are admissable free of import duty under Tariff Item 281 (J.) and are exempt from primage duty when for use in the manufacture of agricultural, horticultural, and viticultural spraying preparations.

The imported Derris Root is being crushed in Australia.

Tariff Item 269 (D) covers Derris Spraying preparations, but is not applicable to Derris and Cube Root, in powder form, as they are not spraying preparations in themselves, but materials for the manufacture of spraying preparations.

Railway Trucks.

It was decided on the motion of Mesrss. R. Bailey and W. H. Carne to write to the Railway Department re trucks for export fruit being in good condition.

Next Meeting.

It was left with the Chairman to call a meeting in February if deemed necessary.

The meeting then closed.

Classified Advertisement.

ELLIS GRADER, without bins. South Australia. Address mislaid. Write **H. Osborn, Upper Beaconsfield.**

FRUIT MARKETING IN VICTORIA.

Messrs. F. Cave & Co. Pty. Ltd. have removed from their stand in the Wholesale Fruit Markets, Melbourne, to a prominent position in the city—391 Flinders-street. Contrary to the belief in some people's minds, the firm is not retiring from the wholesale fruit business, but intend to concentrate on their export trade and the marketing of only high quality fruit, for they believe that there is an extensive market awaiting development in that direction. It is hoped to ultimately correct the erroneous conception in the minds of so many of the public, that practically all of our good fruit is exported.

Varieties will be marketed acording to the time when the fruit is only at its best. This applies to the principal varieties, namely, Apples, Pears, citrus, etc. Specialised lines of top quality fruit will be drawn from reputable growers and registered fruit packing houses throughout various parts of Victoria, and all fruit so supplied will be guaranteed in respect of quality and pack.

In addition to the foregoing, Mr. Cave is actively maintaining his connection with the pure fruit juice business, and in this connection is rendering good service to the general public and the growers.

APPLE EXPORT.

Messrs. Esmond Russell Pty. Ltd. have sent in their annual summary of average prices received for Apples and Pears shipped to the United Kingdom during the 1936 export season.

A covering letter explains that difficulties will eventuate, if the indications of a heavy crop are correct, but these should be surmountable. The local and interstate markets will need to be enlarged, and export markets will need to be availed of as usual. The Coronation should assist the sale of Apples, but good quality fruit is essential.

On the chart is set out the ports to which the fruit was shipped, the boat by which shipment was made, and the average prices of all varieties.

Apples - Pears - Plums and Oranges

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Export & Commercial News

Australian Fruit for U.K.

VIEWS OF MR. W. H. BUCKLAND OF THE WHITE SERVICE.

IT was a pleasure to receive a visit from Mr. W. H. Buckland, a director of Messrs. White and Son Ltd., the well-known British fruit brokers.

Mr. W. H. Buckland.

Mr. Buckland has visited Western Australia, South Australia, Victoria, N.S.W. and Tasmania. He was glad to renew contact with many who met him in England and to make the acquaintance of prominent growers and traders. While in Victoria Mr. Buckland visited Shepparton and saw the efficient equipment for handling Pears for export at the premises of Messrs. S. J. Perry and Company.

While in N.S.W. Mr. Buckland inspected the up-to-date packing house at Batlow, and was interested to observe the clean crops which are developing.

Regarding anticipations for the coming season, Mr. Buckland speaks hopefully regarding dessert varieties provided the quota restrictions are rigidly adhered to in recognition of the known absorption capacity of the British markets.

Unfortunately he was not so optimistic regarding culinary varieties, owing to heavy stocks in England under gas storage, present indications being that it will be possible to satisfy requirements from this source until the end of April or early May.

"Less American fruit will be available," states Mr. Buckland, "there is less unemployment in England, money is circulating more freely, and there is bound to be an indirect beneficial effect from the Coronation. The quality of the pack is most important, as Australia is in competition with other countries, and only the best wins. Of course there is always the factor of the English soft fruit season and its effect at the end of the Australian season. If the soft fruit season is not heavy we can sell more Apples, but if soft fruits are plentiful, Apple prices are adversely affected.

"There is another matter I would bring before Australian growers, and exporters, and that is that far too many people are acting as receivers. I understand this matter has been discussed at the Apple and Pear Export Council Conference. I hope action will be taken, as Australian growers stand to lose under the present methods. The fruit should be consigned to the big firms in England who can effectively deal with the fruit as it arrives."

Messrs. White & Son Ltd. are among the largest fruit handling firms in the U.K., having branches and affiliations in all the ports of England, Scotland, and Europe.

Apple Export from N.S.W.

Zoning of State into Early, Mid-Season and Late Districts

NO SHIPMENT OF ANY APPLES BEFORE FEBRUARY 13.

No Grannies to be Sent before February 22 from Early Districts.

UNDER THE AUSPICES of the N.S.W. Apple and Pear Export Association, which is affiliated with the Australian Apple and Pear Export Council, a meeting of exporters, both growers and shippers, was held on January 19, 1937, and attended also by the State Supervising Officer, Mr. C. G. Savage, Mr. D. D. Atkins, Senior Inspector, Mr. H. Broadfoot, Special Instructor, and Mr. E. N. Robinson, Federal Government's Co-ordinating Officer, to decide upon the fixation of early shipping dates for the coming export season. This question was referred from the Australian Apple and Pear Export Council's annual conference held in Adelaide in October last for determination for each State in collaboration with Governmental officials.

The Maturity Question.

In discussing the question, consideration was given to reports received from London last year relative to the condition of maturity of the early shipments made last season when a certain amount of criticism was levelled at the immature condition of certain consignments.

In view of all the circumstances, it was decided to set back the date of Granny Smith shipments, as it is desired to make every endeavour to maintain the reputation of this variety as a dessert Apple. The following decisions were reached:—

That the Apple growing districts of the State be divided for the purpose of export, into three sections:

(a) The early districts, being—M.I.A., Camden, Forbes and Narromine.

(b) Mid-season districts, being—Penrose, Kentucky and Young.

(c) Late districts, being—Orange, Bathurst and other localities not above mentioned.

That February 13 be decided upon as the earliest shipping date for shipments of the following varieties:—Cleo., Jon., McIntosh Reds, Cox's, Londons, Dunn's, and King Davids.

That no Granny Smith Apples be permitted export before February 22, 1937, from the early districts referred to in the previous resolution, and that the earliest shipping date for the mid-season districts be fixed at March 8, and the later districts at March 22.

That the minimum size of Granny Smith Apples permitted to be exported be fixed at 2⅜ in., or 180 count for the first fortnight of the period from each of the districts.

"Oh, yes," said Jones, "my wife speaks six languages, you know." "Well, I shouldn't worry," put in his friend. "What do you mean by that?" he asked. "Well, she can't speak more than one of them at a time, can she?" he replied.

Export of Apples, Pears and Oranges

Views of the British Trade.

RECENTLY, Mr. Munday, of Messrs. Minear, Munday, and Miller Ltd., Covent Gardens, London, gave a broadcast talk direct from England. We have received a copy of this talk through the courtesy of Messrs. MacDermott & Sheedy, City Fruit Markets, Sydney, who are the N.S.W. representatives of Messrs. Minear, Munday and Miller Ltd. The announcer, in introducing Mr. Munday, stated that he is a South Australian, has lived in London for fifteen years, and has a very wide knowledge of the fruit industry.

Questions as to the despatch of fruit from London, Liverpool, Southampton, and Glasgow were asked, and Mr. Munday explained the different methods used. Mr. Munday also thinks that definite preference is given to Empire products, but at the same time, quality is often a deciding factor with buyers. Advertising is highly successful in England, and good results were received from "The Eat More Fruit" campaign. Apples are definitely the most important fruit in Australia as regards export, and Mr. Munday states that a wise move has been made in restricting varieties and sizes. The Granny Smith Apple is growing in popularity in the English homes, and is becoming a great favorite.

Pears are second in importance, and

(Continued at bottom of page 35.)

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Fruit Prices in the Sydney Market

Survey of Operations for the Period December 22, 1936, to January 23, 1937.

Christmas Market Prices at Pre-Depression Rates :: After Christmas Market Reaction Less Noticeable :: Colored Apples Wanted :: Metropolitan Stone Fruits Finishing :: Grapes Commencing :: Williams Pear Season Promises Well.

By L. T. Pearce, Market Representative, Fruit Growers' Federation of N.S.W.

TRADE DURING THE WEEK prior to Christmas assumed a briskness that was very encouraging to vendors. Less fruit was available than is usual, and buyers appeared to have the money to pay the prices requested. This briskness, however, eased prior to Christmas Eve, when remnants were under offer at comparatively low prices. The period between Christmas and New Year was comparatively quiet, but the customary reaction after Christmas was less noticeable. Fruit was at no time available in quantities which compelled sacrifice prices—other than on the eve of holidays—Peaches at all times being wanted, and Plums, with the exception of a few small Satsuma variety, sold satisfactory.

Interstate consignments of stone fruits were not excessive, and the quality showed a great improvement upon arrivals during recent years.

The dry weather experienced generally throughout the fruitgrowing districts had given little inducement for the development of fungus, and buyers, in consequence, bought with a greater confidence. The reputation of fruit from some districts, however, warned vendors to clear stocks quickly, and buyers, in turn, considered the probability of fungus in the fruit, from certain districts, that was under offer.

Early district Apples became plentiful about the middle of January, and there were continuous requests for fruit with color.

Pome fruits appearing were remarkably clean from codlin moth and black spot, the size of many arrivals, however, being smaller than usual, due to the dry, early Summer, and the Gravenstein variety was generally deficient in color.

Metropolitan growers had practically finished their Plum and Peach season, values generally showing a considerable increase over recent years. **Grapes** were just appearing from Kingswood, Liverpool and the Singleton district, some of this fruit indicating dry weather conditions.

There were indications that the **Williams Pear** season would assume the importance which it had some years ago. This was attributed to canning requirements in Victoria and New South Wales being less than usual and also to a satisfactory crop. Early arrivals from Victoria showed an improvement upon the quality forwarded last year, and New South Wales districts were just forwarding their first consignments.

Crop reports from the various districts vary considerably as both frost and hail had caused losses on individual orchards, some of the losses being of considerable extent.

Apples.

Of the Apples mentioned in the report last month, only twenty-ounce were still available in commercial quantities. Old season Democrat, Yates, Crofton, Commerce and Granny Smith experienced good sale around Christmas time, up to 16/- being paid freely with Granny Smith realising to 22/-.

By the second week in January, however, supplies of new season Apples had increased to a considerable extent, and almost every known N.S.W. variety of Apple was appearing. A marked

(Continued from page 34.)

it is felt that there is a good scope for them in England. Packing is important, and great improvements have been made in this direction. Oranges are third in importance, and now that Australia has a surplus Orange crop, earnest efforts are being made to test the U.K. markets.

Mr. Munday points out that it is absolutely necessary to ship high quality fruit, as the freight is so high, and naturally the same freight is charged for poor or high quality fruit.

In conclusion, Mr. Munday urges Australians to keep the standard of packing and grading backed by an attractive container. This is what is required in England and producers must endeavour to supply these requirements.

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deficiency in color, however, was noticed, and many growers forwarding eating varieties must have been disappointed by the prices returned, this being due to cooking Apples being plentiful.

The Gravenstein crop did not appear to realise as much money as appeared evident earlier in the season, and this was due to the absence of color in this type of fruit. McIntosh Red, at the time of going to press, were just appearing, and were taking the place of the Gravenstein. Very few Apples arrived from Queensland this year, although a few Jonathans were expected.

Victorian and Tasmanian consignments had not appeared upon the market. Prices:—Special and Standard grades. N.S.W.—Eating, most sales 5/- to 8/-; Grav., 4/- to 10/-; McIntosh Red, 5/- to 12/-; Williams Fav., 4/- to 8/-. Cooking, most sales 4/- to 7/-; Granny, 5/- to 9/-; Cleo., 5/- to 8/-; Londons, 4/- to 7/-. Jam price, 2/6 per bushel. Plain and "D" grades lower.

Pears.

A few locally-grown Williams Pears had appeared prior to Christmas, and Victorian fruit was available about January 11. N.S.W. supplies from commercial growing districts also appeared about that date, the Goulburn, Young, Orange and M.I.A. districts all forwarding a few. Victorian arrivals had not been considerable, probably about 10,000 cases only having arrived to date, but within the next two weeks it is anticipated that this quantity will be arriving in single consignments. Fruit from all districts was free of codlin moth and also of black spot. Only a few Clapp's Favorite had come forward, and China variety from N.S.W. metropolitan sources had become almost unsaleable. Prices:—Special and standard grades: Clapp's Fav. (Vic. & N.S.W.), 5/- to 7/-; China (N.S.W.), 3/- to 5/-; Williams (Vic.), 6/- to 7/-; (N.S.W.), 6/- to 7/6, few 9/-; colored, 7/- to 9/- per bushel. Inferior lower.

Apricots.

After a very successful season, M.I.A. supplies finished about Jan. 10, rain on the area causing this to happen. The Goulburn district in N.S.W. forwarded fruit above their usual quality, and good values were obtained for this. Present arrivals are considerably reduced, and are coming from Young and Orange districts. Small consignments have appeared each week since January 11 from Tasmania, and Victorian supplies have at no time been considerable. Prices:—N.S.W., 4/- to 6/-; inferior lower, per half case. Tas., 6/- to 8/- per half bushel.

Bananas.

The Sydney market absorbed 37,516 tropical cases during the period under review, 34,419 cases coming from N.S.W., 2,707 from Queensland, 190 approximately from Fiji, and 200 approximately from Norfolk Island. Latterly arivals have constituted 8-inch and 9-inch fruit, chiefly, with the result that 7-inch and 6-inch received greater request and the range of prices was considerably narrowed. Arrivals after Christmas were ridiculously small, apparently due to growers joining in the festive season and values at that time improved. Prices:—According to the N.S.W. Banana Marketing Board—Regulation graded, first quality fruit—Six inch, 13/- to 15/-; seven-inch, 14/- to 17/-; eight and nine-inch, 14/- to 17/- per tropical case. Incorrectly graded, medium and poor quality lower. Specially selected higher. Norfolk Island 8/- to 12/-; Fiji 19/- to 22/- per tropical case.

Cherries.

Bulk supplies from the Orange district ceased arriving on January 6, but small quantities of fruit from cool store have appeared at intervals up to the time of going to press. The fruit this year kept remarkably well, and, after the rain early in December, both the size and flavor showed a vast improvement. The rain that occurred at this time must have increased the tonnage of the processing and fresh eating Cherries to a considerable extent. At no time during the season was fungus in very great evidence, and the quality of the fruit was favorably commented upon by the general public. Values, in consequence, were better than for some years, and probably showed an improvement of around 1/- a case. Supplies of Florence and Napoleon varieties were a little short of the quantity required to complete the contracts entered into early in the season. Prices since Christmas were mostly at 5/- to 7/- per quarter bushel case.

Citrus Fruits.

Lemons.—Despite the dry weather earlier in the year, small consignments continued to appear from coastal and metropolitan areas, with the result that values have not improved as was anticipated. At Christmas time sales were made to 15/- and Victorian sold to 17/-, but early in the New Year values receded. Much of the fruit referred to is from orchards of an uncommercial type, judging by its appearance, and some of it also is very large in size. Victorian fruit was available until latterly, but consignments are now being held apparently pending an improvement. Prices:—N.S.W. special and standard —Counts 88 to 96, 6/- to 8/-; counts 113 to 150, 9/- to 12/-; counts 163 to 252, 10/- to 12/-; few 14/-, per bushel. Vic. and S. Aust., 8/- to 12/-, few 14/- per bushel. Plain grade, 5/- to 8/-. Inland, 8/- to 14/- per bushel.

Valencias.—Prior to Christmas all arrivals were eagerly sought at from 8/- to 12/- per bushel, and fruit generally appeared scarce. After the New Year, however, the M.I.A. arrivals increased, chiefly from the Leeton end of the settlement, and fruit also came forward from various parts of the coastal regions. A reaction resulted, and prices eased, large sizes seldom realising more than would permit the retailer to sell at 1/- per dozen. The late rains caused a late growth of the fruit and a thickening of the skin at the stem end, and much fruit also had a tendency to greenness.

At present, arrivals are heavy from Leeton, while a few are appearing from Mangrove Mountain. **The count in the case is of great importance, fruit around 150 and 163 is being preferred up to 11/-.** Prices:—N.S.W. standard locals—Counts 88 to 125, 5/- to 7/-, few 9/-; counts 138 to 163, 8/- to 10/-, few special higher; counts 175 to 252, 6/- to 8/- per bushel. Inland, 6/- to 10/-, few higher per bushel. Plain grade, 4/- to 7/- per bushel. Two bushel crates, Inland, plain, 8/- to 10/-, standard 10/- to 13/-.

Grape Fruit.

This has been practically unattainable for some time past, only a few cases of the Gymea brand arriving from Mangrove Mountain. This sold up to 25/- per bushel. The "Niagara" (just in port) brought a consignment of Californian Grape Fruit, and this was quickly cleared at 45/- per Californian case.

Figs.

Small consignments have appeared at intermittent periods, values being mostly between 3/- to 5/- per quarter bushel.

Grapes.

Queensland Grapes were appearing prior to Christmas, but have latterly ceased. N.S.W. fruit first appeared about January 11, when Sweetwater and an early black variety came to the market. The Black Muscat and Black Hamburg varieties appeared on January 15, values for Muscats being to 24/- and Hamburg to 12/- per half bushel. Quantities have since increased, Kingswood, Liverpool and Bulga (near Singleton) all forwarding to the market. Values up to the present have been mostly 9/- to 12/- for Muscat, with a few special quality fruits realising to 17/-, while the small fruit from districts that have not experienced very much rain sold from 6/-. Black Hamburg sold at 7/- to 9/-, with special to 11/-, and inferior from 5/-. A few metropolitan grown Waltham Cross realised from 7/- to 10/- per half bushel. At the time of going to press supplies have increased from many sources, and buyers are disinclined to buy, owing to their expectation of values receding.

Mangoes.

This fruit from Queensland was plentiful until the middle of January, when supplies ceased, prices mostly being 10/- to 13/- per bushel for the Apple varieties.

Melons.

The month has witnessed supplies of Rock Melons from near Sydney, increase considerably in quantity. Supplies from Queensland also have arrived regularly, Californian Cremes and Cantaloups being preferred to

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CITY FRUIT MARKETS, SYDNEY

oneydews. Queensland arrivals have ried from 500 to 1,100 cases per eek, and values were:—Queensland, ock Melons 7/- to 9/- per bushel; alifornia Cremes and Cantaloups om Mundubbera, 9/- to 12/-, and oneydews, 9/- per tropical case. .S.W. Rock Melons are available at om 2/- to 7/- per tropical case. Supies from the Irrigation Area are exected at an early date.

Nectarines.

Chief supplies prior to Christmas ere from metropolitan sources, with few arriving from Victoria, but .I.A. fruit arrived early in the New ear and latterly many inland disicts, including Young, have forarded to the market. Prices comenced at 6/- to 10/- per half bushel, ut much of the Area fruit being nall, values receded and became 5/- 7/- for the majority of sales. This osition still exists, while occasional les of special quality fruit are made p to 10/-. The comparative scarcity f Peaches this year has assisted the le of Nectarines. Prices:—N.S.W.: /- to 6/-, few special to 10/-, inferior ower per half bushel. Vic.: 6/- to 9/- er bushel.

Plums.

Late in December local types appearing were Burbank, Shiro, Blood, Wickson's Seedling and a few Narrabeen, while Angelina had just appeared from the M.I.A. A few Santa Rosa were also coming from Lavington. Victoria forwarded Burbank, followed by Ballena and Angelina. Good demand has been experienced for Plums possessing any size, although many Angelinas at the present time are small and values have receded to 3/-. Special Narrabeen have not been plentiful up to the present, but supplies are anticipated from the Young district in the near future. This fruit has been practically free of fungal breakdown this year, except where stocks were not moved with reasonable quickness. Prices: — N.S.W.: 3/- to 4/6, inferior and small from 1/6, special Narrabeen 6/- to 8/-, Angelina 4/- to 6/-, small from 2/- per half case. Vic.: 6/- to 10/- per bushel, 4/- to 6/- per half bushel.

Peaches.

Metropolitan growers are now just finishing a season which is probably a record for many years, that is, a record for consistently good values, with freedom from fungal breakdown and without periods of over supply. A few Blackburn, Elberta, Shanghai and Rose Champion are still appearing, but a number of these are releases from cool store. Sydney is now, therefore, dependent upon inland sources for its Peach supply, and Elberta comprises the chief variety arriving. Deliveries from the M.I.A. are particularly heavy at present, most sizes, unfortunately, being very large, so that a count of four to five dozen per box realises only 4/- to 5/-, whereas seven or nine dozen per box will sell to 7/-. Small quantities are also coming from other inland districts and from Victoria, deliveries from the Southern State being inconsiderable.

This fruit, like all other stone fruit, has been comparatively free of fungal breakdown this year. Prices:—N.S.W: **Local.** most sales 5/- to 7/-, inferior and ripe from 3/6, special white 6/- to 8/6 per half bushel. **Inland:** 6/- to 9/- per bushel, 4/- to 6/- per half bushel. **Victoria:** 6/- to 9/- per bushel.

Passion Fruit.

Supplies have not been heavy, and at most times there has been a shortage of that special quality fruit which the good class buyer is willing to pay high value for. Arrivals are chiefly from metropolitan sources, and the Central North Coast of New South Wales. Prices:—Local and North Coast, 8/- to 12/-, few 16/-, small and inferior, from 3/6 per half case.

Pineapples.

Early in January supplies were reduced owing to the new crop not being fully advanced. Some arrivals from the Bowen district were particularly green, and buyers hesitated about paying the customary values. Arrivals approximated around 7,000 tropical cases for the period under review, and values at the present time are 6/- to 11/- per tropical case.

Papaws.

Arrivals have now dropped to 47 tropical cases per week, the season being almost completed. Values are approximately 12/- to 16/- per tropical case.

Quinces.

The first of these appeared from local sources in New South Wales about the middle of January, most of the fruit being small in sizes. Values are from 5/- to 8/- per bushel.

Strawberries.

Supplies have decreased steadily during the last few weeks, and values were nominally at 6/- to 12/-, with special higher at the end of the week and very small fruit selling from 3/- per dozen punnets. Due to humidity, considerable wastage was experienced in this fruit.

Tomatoes.

This fruit experienced a bright market prior to Christmas, when values went to 16/- per half bushel case, but between Christmas and New Year values eased, and, except for slight fluctuations, continued at a comparatively low level. Arrivals now are chiefly from metropolitan sources, the M.I.A., a few from Victoria, with the first consignment arriving from Stanthorpe, in Queensland, this week.

The Central North Coast practically finished forwarding during the third week in January. Prices:—**N.S.W.: Local,** 2/- to 4/-, few higher per half bushel; **M.I.A.,** 2/- to 4/-, few 6/- per half bushel. **Queensland: Stanthorpe,** 2/6 to 4/- per half bushel. **Repacked,** 5/- to 7/- per half bushel. **Victoria:** 5/- to 8/- per bushel.

Apple and Pear Export for 1937

THE AGREEMENT between the Australian Apple and Pear Export Council and the N.Z. Fruit Export Control Board provides for the total shipment of Apples to the U.K. for the 1937 season as follow:—

Australia	3,750,000
New Zealand	1,150,000
	4,900,000

If there should be a shortage in one country this cannot be filled by the other country.

Included in the foregoing is the quantity for February (excluded in previous agreements). The total shipments of Apples to U.K. from Australia in February will be 250,000 cases.

The individual State figures for the whole season are as shown hereunder:—

Queensland	27,000
New South Wales	108,800
Victoria	543,100
Tasmania	2,323,950
South Australia	225,200
Western Australia	521,950
	3,750,000

Pears.

Pears for U.K. from Australia and N.Z. are not under the quota system.

It is estimated that the total Australian Pear export will be around 500,000 cases, of which Victoria will ship approximately 350,000.

Fruit for Continent and the East.

In addition to the export of fruit to U.K. as outlined in the foregoing figures, there will be the export of fruit to certain European countries and to the East from the several Australian States and New Zealand.

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Market Notes and Prices

(Continued)

VICTORIA.

Market Report for January.

MILD weather conditions affected sales on the wholesale markets following the Christmas trade. The prevalence of large supplies of other fruits affected both citrus and Bananas. January was a good month with supplies and movement as good as predicted. New season dessert Apples and Sultana Grapes appeared towards the end of the month, followed by Cantaloups and Watermelons in limited quantities. Amongst the stone varieties—

Apricots made their disappearance. During their season Apricots sold exceedingly well. Quality was good and this season is reported as being the best marketing year for many seasons. No glut occurred and prices and demand were both consistently good.

Peaches: Careful buying was influenced by the presence of brown rot preventing large movements. Conditions improved in the last fortnight however, but were not reflected by any extravagant ordering.

Plums: In the early half they sold well, but lagged towards the end. Average varieties were slow and prices low owing to factories limiting what they would take. This reflected in large supplies on the market and consequent low prices.

Citrus: Oranges eased in last two weeks on account of heavy supplies of Pears at low prices. Grapefruit was very short-supplied with high prices. Only one shipment of Californian Grapefruit arrived during the month and brought big prices.

Grapes: New season Grapes appeared. Sultanas were practically the only Grapes offering, but some of these were picked too soon and inspectors refused to pass them. Again the rush for early markets affected the quality and the sales.

Apples: New season desserts appeared. Williams Favorite and Gravensteins were well supplied and reasonably cheap to move to a fair demand. Cookers were well supplied and moved nicely.

Pears: For first two weeks sold well but slumped towards end of month with low prices and affecting sales in other fruits.

Pineapples eased towards the end of the month. New season's crop appearing. Prices were on the cheap side.

Bananas: Affected by cheaper fruit and eased towards fourth week.

Tomatoes: Good sales. Victorian samples splendid quality and fair prices. Prices dropped owing to mild weather.

Melons: Cantaloups started off well, but prices dropped in last week when supplies increased. Watermelons appeared, rather pale and demand light, prices favorable.

Passionfruit was scarce and prices relatively firm.

Berries sold well right through to fair prices.

Nectarines were affected with brown rot and prices dropped. Quality not very satisfactory, though supplies were good.

Melbourne (3/2/37): The following prices are quoted by the Wholesale Fruit Merchants' Association per case: Apples, eating, 4/- to 7/-, few higher; cooking, 3/- to 5/-. Bananas, per double case, green, best, 9/- to 12/-, few higher. Grapefruit, 12/- to 20/-; selected, 24/-, few higher. Lemons, good quality, 6/- to 12/-. Oranges, Vals., 6/- to 12/-, special higher. Nectarines, 5/- to 7/-, few higher. Papaws, 14/- to 18/- double case. Peaches, 4/- to 7/-. Elbertas, 3/- to 5/- case, few higher. Pears, 2/- to 5/-. Pineapples, 7/- to 10/-, few higher. Passionfruit, half case, 8/- to 12/-, selected higher, inferior lower. Plums, 2/- to 5/- case, few higher. Tomatoes, local, 2/- to 6/-, few higher. Supplies were light. Figs, half case, 3/- to 5/-, choice higher. Cucumbers, to 2/6. Cantaloups, 6/- to 8/-, few higher. Grapes, 12/- to 16/- case, few higher; inferior lower.

The Melbourne market manager of the Federal Citrus Council of Australia reports sales as follow: — Vals., average standards, 5/- to 8/- and 9/-; good standards, including M.I.A., 6/- to 10/-, a few 11/-; a few specially selected to 14/- and 15/-, some higher. Grapefruit, average standards, 45-53, to 19/- and 20/-; 38, 16/- to 18/-; 30, 14/- to 15/-; 24, from 12/- selected, 2/- to 3/- higher; few specially selected to 30/-. Lemons, average standards, to 9/-; good standards, to 10/- and 11/-.

QUEENSLAND.

Brisbane (20/1/37).—Messrs. Clark & Jesser report as follows:—For the past month our market has been well supplied with all lines of fruit and vegetables. The ruling prices at present are:—**Apples:** Grav. 11/- to 13/-, small 8/- to 9/-; Local Jons. 9/- to 11/-; cooker, Alf. 8/- to 9/-, G. Smiths 10/- to 11/-. **Pears:** W.B.C. 9/- to 10/-. **Oranges:** 11/- to 12/6. **Lemons:** 12/- to 13/-. **Peaches:** 3/- to 4/-. **Plums:** Pon. Seedlings 6/- to 7/-, Giant Prunes 5/- to 6/-, Angelina's Large 8/- to 9/-, small 6/- to 7/-, President and Grand Dukes 5/- to 6/-, Black Diamond 4/-. **Passionfruit:** 6/- to 7/-. **Mangoes,** 4/- to 5/-. **Papaws:** 4/- to 5/- per dump case. **Pineapples:** Roughs 7/- to 8/- per case. **Bananas:** 10/- to 12/-. **Tomatoes:** 4/- to 5/-. **Cabbage:** 10/- to 12/- chaff bag. **Beans** in very heavy supply, 2/- to 3/- sugar bag.

WESTERN AUSTRALIA.

Perth (29/1/37): Apples: Jon., new season, flats, 8/6 to 9/- (special to 10/-); Dunn's, flats, 2/- to 4/-; Cleo., flats, 2/- to 4/6; Williams Favorite, 4/- to 8/6; cookers to 5/-. Citrus: Vals., flats, 4/6 to 9/6 (special to 10/3), dumps, 6/- to 13/- (special to 14/-); Lemons, 5/- to 10/- (special to 11/-). Stone fruits: Plums, Satsuma 1/- to 4/- (special to 4/6), Wickson 1/- to 5/- (special to 6/-), Burbank 1/- to 2/6, other varieties 1/6 to 4/6; Peaches 2/- to 8/- (special to 12/3, inferior from 1/-); Nectarines 3/- to 10/- (special to 11/-, inferior from 2/6); other lines: Pears, Bartlett, flats 1/- to 4/-, dumps 3/- to 5/6, other varieties, flats 1/- to 3/-; Grapes, open, white 3/- to 7/- (special to 7/3), colored 3/- to 6/6; Passionfruit, 3/- to 5/6 (special to 6/6); Tomatoes 1/6 to 6/- (special to 7/9, inferior from 1/-).

SOUTH AUSTRALIA.

Adelaide (29/1/37): Apples (eating), 6/- to 8/- case; do. (cooking) 6/-; Apricots 5/- half case; Bananas (Qld.) 18/- to 22/- case; Grapes (dark) 6/- half case, do. (white) 6/-; Lemons 6/- to 7/- case; Oranges (Common) 8/- to 10/-, do. (Navel) 12/-; Peaches 3/6 to 4/6; Pears (eating) 6/- to 7/-; Pineapples 20/-; Plums (light) 4/- to 5/-, do. (dark) 4/- to 5/-, do. (Damson) 5/-, do. (Jap.) 5/- to 7/-.

NEW ZEALAND.

Dunedin (15/1/37). — Messrs. Reilly's Central Produce Mart Ltd. report as follows:—During the week supplies of stone fruit have been limited, and better weather conditions are necessary to bring on supplies. Peaches are short of the demand, but Apricots have been in better supply and prices for all lines have firmed considerably.

Only small consignments as yet, of new season's Apples are coming to hand, and these are netting good values.

Cherries are practically finished for the season. Dessert Plums and Pears are just commencing to arrive. Strawberries are almost finished. Loganberries are limited, and it would appear that the Raspberry season will be a very short one, and for all these lines values have advanced. Black and Red Currants are wanted. Tomato prices are slightly easier.

At the present time there are only a few Jamaican Oranges available to meet the shortage of this fruit, but a shipment of Californian Navels is due this week ex the "Limeric[k]."

The market is glutted with supplies of ripe Bananas ex the "Matua." A small shipment of Samoan Bananas ex the "Maui Pomare" came to hand during the week, this fruit being in good order.

Prices (Per Case):—Oranges: [illegible] Navels 40/-, Jamaicans 32/6, Japanese Mandarins 12/6. Lemons 65/-, Grapefruit 37/6, Ripe Bananas to 2[illegible] Pines to 26/-. Apples: Sturmers [illegible] to 8/-, new seasons Gravensteins [illegible] to 12/-, and Astrakhans 8/- to 9/-. Lemons, 18/- to 25/-, wasty 8/- to 10/-. Per half-case.— Apples: [illegible] seasons 1/6 to 3/-; Pears, 2/6; [illegible] gonelle Pears 4/- to 5/-, Peaches to 4/6, Apricots 3/6 to 6/6, Cherries Plums 3/- to 4/-, Dessert Plums to 6/-, Satsumas 4/6 to 5/6.

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Investigation of Fruit Problems

Internal Cork and Water Core in Apples — Factors Affecting Sultana Yields — Waterlogging and Nutrition of Citrus Trees — Root Stocks for Apples, Pears, and Plums.

ests are Being Conducted by the Council for Scientific and Industrial Research.

PROBLEMS ASSOCIATED with fruit growing are being investigated by the Council for cientific and Industrial Research. he work is going on in all States. n the tenth annual report of the .S.I.R. just to hand the following, mong many interesting items, is reorted:—

Fruit Investigations cover work in asmania on non-parasitic diseases of pples; on Sultana vines at the Vitiultural Research Station, Merbein, ictoria; on citrus problems at the itricultural Research Station, Griffith, .S.W., and at Stanthorpe, Queensand, mainly on stock and scion relaions for Apples.

(i) In Tasmania.—The investigation f physiological diseases of fruit in he field and disorders following torage has been continued.

(See report on cool storage page in his issue.)

Disorders in Fruit on Trees.

Tree Pit was worse in 1936 than in 935. Cleopatra on shallow and inerior soils suffered severely; while turmer Pippin suffered to a lesser xtent where fruit was dwarfed by rought; but the disorder was more idespread where fruit attained a ormal size. The relation of pruning ethods to the incidence of this disase in Cleopatra was again investiated.

Internal Cork

as more serious than in 1935, areas ree in that year being affected in 936. A series of experiments to test he hypothesis that this disease is a esult of boron deficiency were laid ut in eleven orchards, and four diferent methods of applying the boron ere used. It was found that applitions of boric acid markedly reuced the incidence of the disease in turmer and **Granny Smith** varieties, ut had no appreciable effect in **Cleoatra.** In the case of Pears the treatent was not successful.

Water Core.

This disorder was very prevalent in rge-fruited and light-crop **French rabs,** but of moderate intensity in **ox's Orange Pippin** and **Jonathan.** n the whole this disease was worse an in 1935.

Superficial Drought Spot appeared **Scarlet Pearmain** from trees on allow soil.

(ii.) Growth and Bud Studies.—udies of the fundamental phases of oot growth and development and the lation of cyclic growth periods to vironmental conditions in the Sulna vine have been continued along e lines previously reported.

ii) Investigations in the Irrigation Areas.

At Merbein, Victoria, experiments the **Sultana vine** dealing with the lations between shoot growth, the cumulation of starch, and nitrous compounds, the current seaon's crop, fruit bud formation and ld in the following season have en continued.

It has been found that the mean ight of prunings may be taken as useful index for defining the vegeive vigor, and also the yield potenities of a block of vines.

On the other hand, except in the e of vines of low vigor, there is le correlation between the amount shoot growth and the yield of the owing season in individual vines of the same vineyard. The quality of the shoot growth is more closely associated with the amount of fruit produced.

Uninterrupted and sustained shoot growth during the period September to February is conductive to the accumulation of reserve starch, the proper maturation of the shoots, and the formation of fruit buds.

These findings are not in agreement with a current conception that the vines require a mid-Summer rest in order to obtain the best results.

One of the most important of the factors which depress shoot growth, and which retard the accumulation of reserve starch and the formation of fruit buds, is the presence of the current season's crop.

The heavier the crop the more necessary it becomes to maintain continuous shoot growth during the September-February period in order to ensure the proper development of fruit buds for the following season. The question of the renewal of shoot elongation growth subsequent to February (i.e., during period March-April), is being investigated.

Experiments dealing with the practice of

Summer Pruning or Tipping

have been concluded; and results confirm the conclusions previously reported. It has also been found that the practice of cincturing Sultana vines is not to be recommended; while disbudding or the removal of barren shoots also has a detrimental effect upon total growth and production.

In the **Murrumbidgee Irrigation Areas** a survey has been made of the "decline" of **citrus trees,** which has been manifest during the past few years.

The acreage under citrus has decreased since 1931, while production following a drop in that year has since increased at an accelerating rate.

The primary cause of the high death rate of the trees since 1930 has been attributed to extensive soil waterlogging caused in the first place by over-irrigation, but accentuated by extraordinarily heavy rains during the Winter of 1931. Severe root injury incurred about this time has resulted in the gradual decline and death of many trees. These conditions have been aggravated by a certain amount of neglect of orchard cultivation on the part of growers. Neglect has been due in a large measure to the depressed economic conditions during the period 1930-1934.

The **nutrition of citrus trees** is a problem which is becoming increasingly important in the irrigation areas; and as part of a comprehensive investigation in this regard, studies have been initiated to determine the role of mycorrhiza in citrus root absorption.

(IV) Investigations In Queensland.

The propagation of root-stocks for Apples, Pears and Plums has been continued in the nursery area on the Government reserve at Stanthorpe. These stocks include East Malling Nos. I. II., VII., IX., XII. and XVI., Northern Spy, Ben Davis, Emp. Alexander, Duchess of Oldenburg, Transparent de Croncels, Winter Majetin, Zuccamaglio, Niedwetzkyana, Lady Carrington, Kirks, Allsopp's Early, Reinette, Seedling Pomme de Niege, four Merton and some ten unnamed local stocks for Apples; Myrobolan B, Pershore, Brompton and Common Mussel for Plums; and East Malling Nos. C2. C6, C7, D4 and D3 for Pears.

Of these following, viz., Malling Nos. XVI., XII and I., Northern Spy, Seedling Pomme de Niege and two of the selected local stocks have been budded to Granny Smith and Jonathan, and sufficient trees obtained for planting out in a permanent field trial next season.

The remainder are subject to experiment and observation in the nursery to determine the best means of propagation for each variety, compatibility with the principal scion varieties of the district, rooting characteristics, relative vigor, etc.

In preliminary nursery experiments on the propagation of varieties on their own roots, of Apples only two, Marjorie Hay and Mona Hay, rooted satisfactorily from cuttings of one-year-old wood. Layer beds of some 30 varieties were established during the past season to extend this aspect of the investigations. A number of vigorous East Malling stocks have been planted in the field alongside trees on Spy stock and marched (grafted) into their trunks, in order to determine whether additional vegetative vigor may be imparted by these means.

A beginning has also been made in the investigation of nutrition problems associated with fruit culture in the Stanthorpe area. A certain type of leaf blotch, which is prevalent among Apple trees in the district, has been shown to be caused by a deficiency of lime in the soil. Preliminary trials to test the effect of injecting certain salts into the trunks and main limbs of trees have been initiated.

THE PIG PEN

HOUSING OF PIGS.

Some Important Points.

A SOUND, sanitary, suitably situated piggery is essential if pig raising is to be engaged in with maximum profit. A departmental pamphlet issued by the N.S.W. Department of Agriculture, enumerates as follows the points to be observed:—

1. Sties should, if possible, face the north or east, so that they will get the full benefit of the sunlight. Sunlight is a most efficient germicide, and is a great help in keeping the sties sweet and sanitary.

2. Sties should be built on rising ground to ensure good drainage. This does not necessarily imply that they should be placed on the top of a hill, where the animals would be exposed to every wind that blows.

3. The roof should be sufficiently high to admit of the sty being cleaned easily. The idea of keeping a pigsty clean is revolutionary to some farmers, but disease and filth are associated as a rule, and cleanliness is essential to the preservation of health.

4. The walls should be smooth, so that there is no harbor for animal parasites. On this account walls of split bush timber are objectionable.

5. Allowance must be made for plenty of sunlight and fresh air.

6. The walls must be impervious to the wind, so that the sty is not draughty.

7. The floor should be impervious to moisture. The common custom of allowing the pigs to sleep on the earth, while doing away with the necessity for bedding, has much to condemn it. The earth is easily rooted up, is damp and cold in winter, and is soon saturated with filth. Concrete makes the most sanitary floor, but, as it is cold and hard, a sleeping platform of wood is necessary with it. If this is made sufficiently light it is easily removed for the purpose of cleaning the sty. A floor made of hardwood, well joined and raised above the ground level, is quite satisfactory; but floors made of slabs laid on the ground are little better than the earth itself.

If the points enumerated above are attended to the pigs will have dry, clean housing in favorable situations, free from draughts, and yet with abundance of fresh air.

Shade Essential.

During the summer adequate shade for pigs is essential, advises the "Queensland Agricultural Journal." The ordinary sty, especially if it has an iron roof, is very hot, and some other shade is necessary in the heat of the day. If no trees are present, a wooden shed will answer the purpose. Another important aid to the health and comfort of pigs is a bath in which they can lie in hot weather. To wallow in the mud is the pig's natural method of cooling himself, and if the pig-yards have a frontage to a stream, well and good, though there is an objection to pigs wallowing in a stream, in so far that infection may be carried down from diseased pigs higher up the stream, and as a result contagion spread over a wide area. Unfortunately, the hog wallow usually seen on the pig farm consists of a filthy puddle-hole, into which drains all the excrement from the yards, and in the foul mud of this, the only wet spot available, the pigs are compelled to seek relief. If there is infection of any kind in the yard, it is to be found in just this place. Such wallows should be drained and filled in, and if there is no naturally clean place for the pigs to lie in, a concrete or similar bath should be built. This can then be kept clean, and the liability to infection from contagious disease will be diminished. Comfortable and hygienic conditions are most important in maintaining the health and wellbeing of pigs.

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The Benefits of Lime to Orchard and Vineyard

Experiences in South Australia

THE HIGHER RAINFALL AREAS in most countries are deficient in lime through its having been leached from the surface soils and often deposited in the form of rock inaccessible to plant life. This surface deficiency has to be replaced to maintain maximum plant growth.

Thus stated Mr. E. R. Radford before the Greenock (S. Aust.) conference of producers ("S. Aust. Jour. Agric.").

Continuing, Mr. Radford gave the following hints:—

Forms of Lime Used in Agriculture.

Gypsum, which is calcium sulphate, is different in its action from calcium carbonate, which includes air-slacked lime, ground shell, limestone, marble or coral. Phosphate of lime is another form which is used mainly for its manurial value as a phosphate, being ground phosphorite or apatite rock.

Gypsum has been extensively used as a corrective of stiff clay soils, particularly on our river settlements, where adjacent deposits make it an economically sound proposition. It is quite effective, as it coagulates the clay, i.e., makes it loose and friable, thereby making it easier to work. It also liberates potash, but it is not effective as a sweetener of cold, sour soils.

Carbonate of lime, on the other hand, is just as effective as gypsum as a soil loosener, and it also has the very valuable property of correcting acidity in sour and impoverished soils. Lime can be regarded as a manure, as its presence in soils to some degree is essential to healthy plant life, whether it be tree, vine or cereal.

Wood ashes contain a varying percentage of lime from about 40 per cent. in mallee to 12 per cent. in Apple.

Lime is a plant food, but its chief action is to correct acidity in soils, destroy the ill effects of certain soluble iron salts, liberate other plant foods, such as phosphate and potash, help the process of nitrification by accelerating the decomposition of vegetable matter, and to make impervious, sticky clays friable and porous.

It is the last of these numerous uses that I wish to lay stress on, as in a district such as this many orchards and vineyards have patches of hard clay soil which are extremely difficult to work, unless this is done immediately after a good rain; which is often impossible where a large area is to be covered.

By applying lime in the crude form of shattered decomposed limestone, this type of soil can be made loose enough to work down finely under any conditions.

Clay patches that, previous to application had remained in huge clods which a set of harrows just bounced over unless it was too boggy for a team to walk on, will now break down finely when being turned by the plough, and often do not need harrowing. These clays used to shed any moderately heavy rain, being almost impervious, even after heavy dressings of farmyard manure, but they now absorb practically all the moisture that falls.

Trees and vines on these treated areas show marked improvement both in their capacity to bear crops of good mature fruit, and to make strong wood growth. They also carry their foliage much later than previously.

I find the application of this decomposed limestone, which on analysis shows 68 to 70 per cent. calcium carbonate, a cheap proposition, as there are deposits on my property. There are several deposits in the vicinity, and 2 plugs of gelignite in a 3 ft. hole will give about 2 dray loads of pulverised and broken stone, which is applied fairly thickly. Apart from a thin hard crust of about ¼ to ½ in., all lumps will break up with the ordinary working of the soil. The effects can be seen almost immediately, and have been known to last for 40 years.

Of course it would not be a payable proposition to apply carbonate of lime in the form of ground shell or air-slacked lime at the rate of about 15 tons to the acre, as I do with the soft limestone, but it must be remembered that this heavy application is practically everlasting, as a little more lime is broken up every time the land is worked.

I strongly advise anyone having deposits of this soft limestone on his property or in the vicinity to use it, even if only half the quantity is used; which may be sufficient if the soil is not very stiff. These large quantities are not needed to sweeten cold, sandy soils, and 1 ton of calcium carbonate every 5 years or so would be very beneficial.

Vines thrive on lime, and in some localities can be seen growing in apparently solid limestone.

The action of lime in liberating potash, which is generally plentiful in a form not available to plant life in most of our heavy clays, is of great economic value, as potash with lime is assimilated by the plant and is converted into carbohydrates, which form the fats and starches in cereals and the sugar in fruits.

Therefore, lime means fruit with a high sugar content.

Nitrogen, which promotes strong vigorous growth for the next season's fruit wood, is liberated and encouraged by the application of lime, as it definitely promotes the activity of nitrogen producing bacteria in the soil.

Calcium phosphate, as it contains so much lime, when finely ground, is also beneficial to sour, wet soils, and nitrogen, which is generally lacking in this type of soil to a marked degree, can be applied in the form of sulphate of ammonia in conjunction with the calcium phosphates, as it liberates the phosphates more quickly.

COUCH GRASS.

The N.S.W. Department of Agriculture advises orchardists to endeavour to eradicate couch grass as this grass robs the trees of moisture and food.

The use of fowls has proved successful in the Hawkesbury River District, while other orchardists spread sheets of iron under the trees. Shallow ploughing is a good method of eradication, and should be carried out as often as the couch appears. Many growers use harrows and cultivators but in doing this small pieces of couch are replanted. Cultivators and harrows should be used just before ploughing. This dries the surface soil and causes the grass to die.

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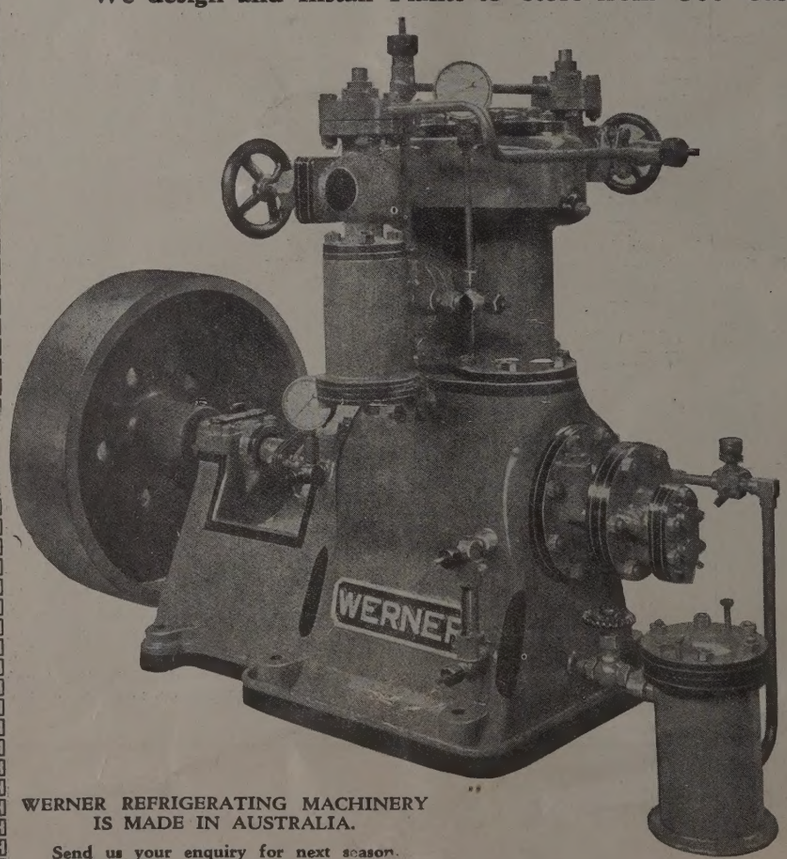

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